Railway Age

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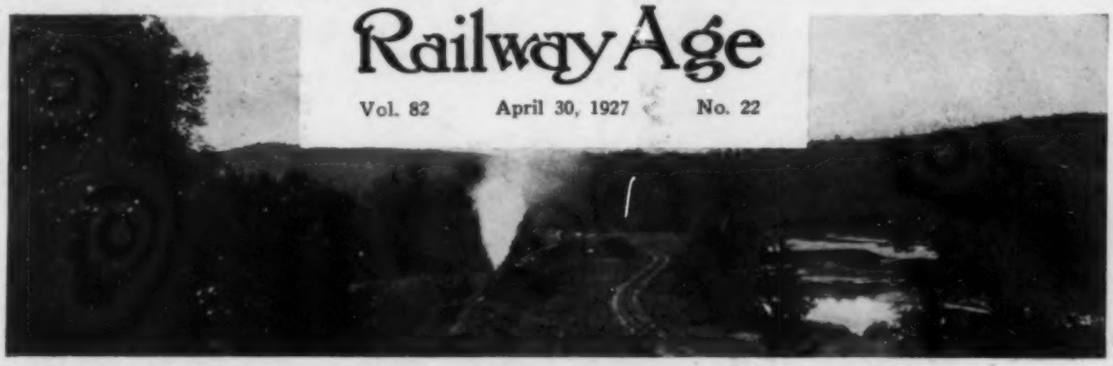

Grand Trunk and Maine Central Lines Along Connecticut River Near North Stratford, Vt.

Contents

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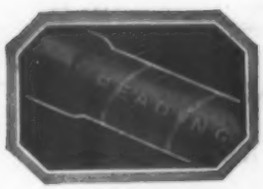

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GENUINE WROUGHT IRON

Railway Age

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Training Leaders

A GROUP of experts recently gathered to discuss the needs of supervisors and foremen in industrial organizations and as to how these men might be helped and inspired in improving their leadership ability. It was admitted that the approach to the problem would depend to a great extent upon local conditions and the personalities involved, but that generally speaking, a group of supervisors interested in securing a better understanding of the principles of successful leadership would make the greatest progress if conducted as a discussion class or group, under the leadership of one who understood the technique of leading such groups. This is a comparatively new conception, but the practical results that have followed during the past few years from experimental conferences for training conference or discussion leaders, have been so great that those who are interested in vocational training are planning to promote such conferences upon a still larger scale. This development is one that can well be watched and studied closely by railroad officers and supervisors.

Teaching Employees the Meaning of Statistics

STATISTICIANS sometimes needlessly curtail their audiences by letting out too much of their knowledge at once. Nothing is more disconcerting to the novitiate in figures than to be overwhelmed by all varieties as soon as he shows the least sign of interest. A certain railroad, desirous of inculcating a knowledge of some of the fundamental operating statistics into its employees, picked out one figure upon which to concentrate. This figure was gross ton-miles per train hour. By concentrating upon this figure alone, calling attention to its variations by frequent bulletins, the whole railroad soon came to know what it meant, and a tremendous improvement resulted. The conductors have their gross-ton-miles per train hour figured out by the time they complete their runs. The time is probably approaching when this company can safely introduce some other fundamental figure to its employees. Meantime there can be no doubt that it has proceeded wisely in concentrating at first upon one figure alone.

The Fruit of Co-operation

ONE clear result of co-operation begun some time ago between shippers and carriers in the effort to reduce freight claims is the marked decrease shown in freight claim statistics with regard to losses due to theft. There was a reduction in 1926 of about 30 per cent in the claim payments due to this cause, and a decline of $11,412,446 from the total losses from theft in 1920. The program of co-operation included not only more careful checking up of shipments and policing on the part of the railroads, but more secure packing by the shippers, as well as more careful marking of shipments and the furnishing of more detailed information regarding the goods shipped. The mutual working out of methods of reducing claims also resulted in the more careful sealing of cars and the use of cars in such good order that they made more difficult the work of breaking into them—all of which has resulted in a reduction, in claim payments for loss due to theft, of nearly a third in one year.

Rail Motor Car Power Units

THE Chicago, Rock Island & Pacific is now making a development in rail motor cars which is a step in advance of present practice and holds much of promise for the betterment of local transportation service. Besides securing five additional new 275-hp. passenger-baggage gas-electric cars, as reported elsewhere in this issue, the Rock Island has converted two 40-ft. mail cars into express motor car power units, which develop 550 hp. each and are geared to operate, one with a three-car passenger train on regular local train schedules, and the other in slow-speed light freight service handling up to 800 gross tons trailing load. These cars burn a special grade of petroleum distillate, which, because of its non-explosive nature, can be carried safely in a 600-gal. fuel tank in the motor car body. The motor car power units are, therefore, in effect, locomotives with limited express-carrying capacity and a "cruising radius" made possible by relatively infrequent fueling periods. In addition the cars are practically independent of terminal conditioning work and do not require housing or watching. They offer highly attractive possibilities for use in light local passenger and freight service and switching at isolated points.

Reducing Transfers

AN indication of increased operating efficiency is the reduction in the number of cars transferred. This tendency is country-wide and some terminals show particularly good records. Chicago, for example, reduced the number of transfers 79 per cent in 1926, compared with 1923; Houston and Montreal 94 per cent; Toledo 85 per cent, and Ft. Worth and Buffalo more than 70 per cent each. These reductions were made in the face of a materially increased volume of business in 1926. There are a variety of reasons for this. In general, equipment has improved, the rules covering trucks have been amended so that it is no longer possible to justify the transfer of cars on minor technical defects and there is a better understanding between the operating and the mechanical departments. No operating man wants to run cars that are unfit to run; but there are any number

of cars which would have been transferred a few years ago that are now permitted to run. It is no longer a common practice to transfer cars into home equipment merely to avoid per diem charges. The tendency is also to place the repair tracks and the transfer tracks under the same officer. In many cases this reduces transfers materially, since there is no longer any incentive for a car foreman to order a car transferred because he does not have room for it on his repair track. Many abuses have crept into the transferring of cars, but with the present interest in the subject, it is only a matter of a short time until most of them will be weeded out.

The First Cost Is Not the Only Cost

IT is not unusual for a railway management to wake up to the fact that a new and larger facility, such as a passenger station, costs more to operate than the smaller and less adequate layout which it replaced, after the expenditure for the new facility has been made and it has been placed in service. In other words, the error is not infrequently made of failing to appreciate that the first cost of such a facility is not the only cost, but that the more commodious layout requires a larger force and a higher standard of service. Instead of expecting a reduction initially in operating cost in a more extensive terminal, or even of keeping down to the old cost, it should be recognized that its advantage, at least at the beginning, will lie in its attraction of new patrons by reason of the improved service, in the greater capacity available and in the ability to handle business without congestion and delay. As the business increases over a period of years, it may reasonably be expected that the unit costs will decline, possibly below those of the old facility when working at its maximum, but this decline will be gradual, depending upon the growth of business. In considering the expenditure for a new terminal, these things should be recognized from the beginning, for failure to do so will only result in disappointment and unjust criticism of those who may be responsible for its operation after its completion.

The Rate of Return

WHEN an investor analyzes the earnings report of a railroad he is chiefly interested in the relationship of the net income after interest and other fixed charges to the number of shares of stock outstanding. In other words, the most interesting figure to him is the earnings per share on the company's stock. The railroad manager, knowing in most cases that the capitalization is less than the value of the actual investment in the property, might prefer also to interest the investor in the relationship of the net after equipment and joint facility rents, or the net railway operating income, to the property investment. This is, of course, the rate of return on the property and is the amount that, averaged for the roads as a whole or by groups, is supposed to equal 5¾ per cent. Some railroad executives have shown keener appreciation than others of the investor's interest in these factors. There are some few railroads that do not even show net railway operating income in their annual reports to stockholders. It is only fair to notice, however, that the 1926 annual reports seem to have shown a considerable improvement in this respect over 1925. There are other railroads that show in some cases the rate of return on the property investment, in others the earnings per share on the stock and in still others both figures. Some go further and show a tabulation of the rate of return for several years which is extremely helpful particularly in the case of a railroad that has made substantial expenditures for additions and betterments. The ideal, however, is the road that shows the comparative table of return on the investment for several years, also the earnings per share on the stock and then publishes also a tabloid report that can be sent to stockholders soon after the close of the year. It is not a difficult ideal to attain. A number of roads are already following this policy and an increasing number tend to do so. More might do it if they realized how keen is the investor's interest in such material.

Southern Pacific Enters Motor Transport Field

MORE than ordinary interest attaches to the announcement of the organization of the Southern Pacific Motor Transport Company, to operate both buses and trucks as auxiliaries to the railway service of the parent company, the Southern Pacific. In the first place, the territory served by the Southern Pacific, particularly California, has some of the most highly developed independent bus and truck systems in the country. California is generally considered to be the birthplace of motor transportation, and it has probably gone as far, if not farther, than any other region in the use of buses and trucks as carriers. The likelihood now is that the Southern Pacific itself will soon be the most important factor in the motor transport business of California. In the second place, the organization of the motor transport company is the result of close and extended study on the part of officers of the railway into the possibilities of bus and truck operation by railways. In the experience of its subsidiary, the Pacific Electric, which has operated a large fleet of buses for several years, the Southern Pacific has had an opportunity to see at first hand what results can be accomplished through the coordination of railway and highway transportation. In the light of these things, its decision to operate buses and trucks itself is significant and important. It constitutes a support of the contention of advocates of highway transportation that the railways should not consider it solely as a competitor, but should take advantage of it as an auxiliary.

Little Complication in the O'Fallon Case

THE Busch interests will undoubtedly carry to the United States Supreme Court the recapture case of their nine-mile railroad subsidiary, the St. Louis & O'Fallon. There is not lacking a certain irony that an industrial concern is in this instance called upon to fight through the courts on behalf of the railroads, one of the most vital cases presented in the railroad world in several years. In the St. Louis & O'Fallon, although about as small as a railroad really can be, there seem to be combined in a remarkable way all of the points involved in

the determination of the issues in question without the complication of other issues that might prevent clean-cut thought and decision. The St. Louis & O'Fallon has been called upon to pay over to the government the sum of $226,000 plus interest, such payments to be made within 90 days from the date of the order which was February 15. The carrier can take the case to the federal courts by securing an injunction preventing the collection of the recapture funds. It apparently can also take it to the courts simply by refusing to pay and thereby requiring the commission to institute action to collect it. It is to be expected that the railroad will adopt the former course. There seems to be some doubt with reference to the latter particularly on the ground that if the road simply refuses to pay, it may be liable to fines or its officers may be liable to criminal action. In such case this would be a complication that might interfere with decision in the main issue which is, of course, whether the commission has used correct methods in determining the value of the St. Louis & O'Fallon. It is the lack of complication that makes the case as a whole such an interesting one and it is to be hoped that no collateral issue will be raised until the more basic question has been decided.

How to Keep the Work Train Busy

IN a letter to the editor, appearing elsewhere in this issue, a correspondent comments on an editorial on the subject of work trains which was published in the April 16 issue of *Railway Age*, and outlines one way in which co-operation between the operating and maintenance of way departments will avoid much needless delay to these trains. The extent to which his proposed plan can be carried out depends, of course, on the density and character of the traffic, but there is no doubt that such a plan can be made to work successfully on many roads where it is not now in force, just as it has worked on other roads where it has done much to increase the efficiency of work trains and thereby to make material reductions in operating costs. To the objection that such practice would put a premium on delaying traffic trains by work trains, it may be said that it usually operates the other way about, and that where work trains are thus favored efforts are made to minimize delays to other trains to avoid any curtailment of the privileges accorded the work train. The success or failure of such a plan hinges wholly on the degree of co-operation exercised by the two departments, and a little educational work to impress each with a full understanding of the importance of the other's requirements will do much to bring about this co-operation. As the correspondent says, the question is whether it is cheaper to delay a through train 15 or 20 minutes or a work train with 50 or 60 men an hour or two. In most cases the answer is easy to determine, and a system should be inaugurated which will insure the lesser outlay.

Lacquers versus Paints, Or Lacquers versus Lacquers?

THE use of pyroxylin or nitrocellulose lacquers has increased remarkably during the little more than three years since they became commercial products. According to Department of Commerce figures, the production has increased from less than one and one-half million gallons during the last half of 1924 to more than ten million gallons during the first half of 1926. Thus far the greater part of this production has been absorbed by the automobile industry, but these materials offer possibilities for economy in maintenance cost and durability of finish which are making them very attractive for the exterior finish of railway passenger equipment. With such a rapidly expanding market as the production figures indicate, it is not suprising that what was first introduced as a new type of finish under the trade name of Duco by one manufacturer has since been produced and marketed by many other manufacturers. This entire class of materials is at present passing through its trial period so far as many railroads are concerned, and there is danger that the fact may be overlooked that the products of the sixty or seventy manufacturers now producing nitrocellulose lacquers are as many different products, each with much the same individual character as the products of various oil paint and varnish manufacturers have come to be regarded as possessing. Many of these materials will, no doubt, prove to have the qualities required to make them a success under the severe conditions to which railroad equipment is exposed. It is also more than likely that some of these materials will prove unreliable just as some oil paints and varnishes have done in the past. The future success of nitrocellulose lacquers in railroad work and the advantages which their success holds out to the railroads will be jeopardized unless each railroad keeps in mind the fact that the failure of a single lacquer product is not sufficient evidence on which to condemn lacquers as a class.

More Evidence of Improved Operation

CONTINUED increase in the efficiency of railway operation, following the many new records in this respect established in 1926, is shown by the summary just issued by the Interstate Commerce Commission of freight and passenger service operating statistics for the first two months of 1927. Practically every item in the statement shows an improvement as compared with the corresponding period of last year and the sum total of the improvement is reflected in the fact that an increased freight traffic was handled with almost 10,000 less freight cars owned. How this was accomplished is shown in the statistics showing greater mileage per car and per locomotive per day, greater tonnage per car and per train, greater speed of freight trains and less total consumption of coal. The net ton-miles of freight handled aggregated 76,471,000,000 as compared with 73,080,000,000 in the corresponding period of last year, while the number of freight cars owned was 2,350,823, as compared with 2,360,635. Increased car movement and heavier car loading are both reflected in the net ton-miles handled daily per freight car, which was 515 this year as compared with 492. The average net tons per train shows an increase from 727 in the first two months of last year to 760 this year. The average locomotive made 61.5 miles per day as compared with 60.4 last year. The average mileage per hour of trains in freight service was 12 as compared with 11.7, and in February it was 12.1 miles. Expressing the results of all these factors in terms of the net ton-mileage handled per mile of road daily the traffic density was 5,484 as compared with 5,264 in the first two months of last year. And all this was accomplished with 147 pounds of coal per 1,000 gross ton-miles, as compared with 156 last year.

The Western Arbitration

THE arbitration of the wage controversy between the western railways and their conductors and trainmen will be of unusual interest and importance because of the issues involved. Both sides have shown good sense and public spirit in agreeing to arbitrate. The railways, especially those in western trunk line territory and the northwest could have made a good defense for declining to arbitrate upon the ground that conditions plainly would not warrant them in paying higher wages, no matter who might hold otherwise. The labor leaders might have declined to arbitrate, as they actually did in the southeast, upon the ground which they first took, viz., that they already had got by arbitration and negotiation in other territories what they asked for in the west. Both sides, however, had enough confidence in the strength of their positions to risk submitting their evidence and arguments to a board and accepting the result, whatever it might be.

The board is well constituted. One of the neutral arbitrators, Dr. W. M. W. Splawn, is an eminent educator and economist who has special knowledge of railway problems, and Edward C. Brown is a business man of ability and fairness. It is to be hoped that, unlike the neutral arbitrators in the eastern case, they will set forth definitely and clearly the reasons for the decision finally reached by them. There is very plainly presented the question as to what conditions should be considered, and the weight that should be given to each of them, in determining what are reasonable wages. The same classes of employees have secured on the eastern and southeastern railways advances that make their rates of pay slightly higher than even the peak wages awarded them by the Railroad Labor Board in 1920. No doubt it will be contended on behalf of the employees represented in this arbitration that they should be granted equal advances because the character and conditions of their work are the same, although this is not entirely true because operating conditions are not the same throughout the country.

The most outstanding differences between conditions in the territories east and west of the Mississippi river, however, are of other kinds. The density of freight traffic of the eastern lines is about three times and of the southeastern lines about twice as great as that of the western lines. The same circumstances to which these differences in density of traffic are due result in great differences in the living conditions of railway train-service employees. To a large extent those of the eastern lines live in centers of industry and population where living costs are relatively high, while to a very large extent those of the western lines live in small cities and rural communities where living costs are low. Not the amount of money paid, but the purchasing power of the amount paid, is the true measure of wages, and, measured by these standards, if the money wages of train-service employees are made as high in the west as in the east their real wages will be made higher.

The net returns being earned by the groups of railways west of the Mississippi river are much less than those being earned by the groups east of it. In 1925 the railways in the eastern district (including the Pocahontas region) earned 5.68 per cent on their property investment, and those in the southern district 5.48 per cent, while those in the western district earned only 4.45 per cent. In the first two months of the present year those of the eastern district earned at the annual rate of 5.46 per cent, those of the southern district, 4.52 per cent, and those of the western district only 3.67 per cent. Those of the northwestern region earned last year only 3.87 per cent, and in the first two months of this year at the annual rate of only 1.06 per cent. The ability of the railways to pay any given scale of wages must be considered in the long-run interest of their owners and patrons, and even of their employees. It is just for employees to participate in the prosperity of their employers, and by the same token it is not just for them not to participate in the adversity of their employers if it can be shown to be due to conditions over which their employers have no control. This can be shown as to most western railways. The freight business of most of them has not increased since 1920, their passenger business has heavily declined, and they have repeatedly been denied by the Interstate Commerce Commission advances in rates without which it has been demonstrated that, under highly efficient operation, they are unable to earn reasonable net returns.

While the diversion of freight business to the Panama Canal route and of passenger business to motor vehicles has been largely responsible for their poor earnings, the prolonged agricultural depression in the west also has been an important cause. Whatever may be the reasons, it is well-known that most western farmers, upon whose production and purchases the western lines are so largely dependent for traffic and earnings, are far less prosperous relatively than most other classes of people, including the railway employees seeking advances in wages. Nevertheless, it is plain that, without advances in rates, a large part of which the farmers would have to pay, most of the western lines would be seriously injured, and many of them placed in actual financial jeopardy, by a substantial general advance in wages.

The most important question raised by these facts is obvious, and the arbitration board should meet it squarely. This question is as to whether, when railway employees' wages are submitted to arbitration, those making the awards shall give weight to what the railways are able to pay their employees and to what travelers and shippers are able, or at least are required by regulating bodies, to pay the railways.

Obviously if, in the long run, the nation is to have adequate and efficient transportation service, the wages the railways must pay, the net return they may earn, and the rates they may charge in order to pay wages to their employees and interest and dividends to their security owners, must be arrived at with due regard to one another. There will actually be three parties involved in the western arbitration, although they may not all be formally represented. They will be the employees, the railways and the public, which in the west is composed so largely of the farmers. The rights and interest of all of them should be given due consideration, with especial regard to the conditions that exist in the territory in which all of them work and do business.

The Cure for Weak Railroad Crossings

IN spite of all efforts to develop a railroad crossing that will provide unbroken rails in the direction of traffic movements, the standard crossing construction today differs but little in general plan from the primitive designs that were adopted when the flanged wheel was found to afford the only practical means of keeping cars on rails. This statement is not made in disparagement of the technical skill of the crossing manufacturers, for they have done all that is possible to provide a strong and serviceable structure in the face of an insurmountable obstacle in the form of the four gaps in the running surfaces of the rails. These not only give rise to

the destructive jump of the passing wheels, but also introduce a break in the structural continuity which even the most ingenious reinforcing can overcome only in part. As a consequence, the railroad crossing, although far more expensive than other parts of the track superstructure, is subject to much more rapid deterioration. Furthermore, its structural imperfection places an increased burden on the sub-structure with the result that the timbers and ballast do not last as long as at points in the track away from the crossing.

It is not surprising, therefore, that more than one crossing manufacturer has been critical of the lack of enterprise manifested by the railroads in not providing better foundations for crossing superstructures. Effective drainage is recognized as the first step to this end, but this is made more difficult by the interruption of ditches and side slopes and by the fouling of the ballast with debris shaken from cars. There is, in consequence, every reason for the institution of extraordinary measures to insure proper drainage. But experience has shown that even the most perfect drainage is not always the answer, and investigations made by the Committee on Track of the American Railway Engineering Association show that a number of railroads have under-laid railroad crossings with special foundations, using piles in a few cases, timber platforms in others, and concrete slabs in by far the greater number of such installations.

Like other deep-seated pathological difficulties, chronic weakness in a railroad crossing may be overcome in part by an ample and continued diet of carefully selected ballast and vigorous periodic chiropractic treatment with tamping tools. For this reason and because of the greater expense and loss of time which it entails, many maintenance and operating officers hesitate to authorize the major operation necessary for placing a concrete foundation under a crossing. However, such surgical treatment has never been known to result fatally, and the records obtained by the Committee on Track show that permanent cures have been effected in a great majority of cases. Moreover, in those instances where accurate cost records have been kept, it has been shown that the expense of installing a crossing foundation has been more than justified by the savings accruing from reduced maintenance and fewer renewals of the superstructure.

The Hobgoblin of Reproduction Cost

AN impression has been created that the majority of the Interstate Commerce Commission had no alternative between the basis outlined for rate-making purposes in its recent valuation decision which it described as approximating an investment basis, and a basis of current wage and price levels, which would require a very large increase in railway rates. The commission's majority report itself helps to foster such an impression in its "lurid picture," (to use the words of Commissioner Woodlock's dissenting opinion) of the effects of the use as a rate base of the full cost of reproduction at present prices. But is there not an intermediate ground that could be taken consistent with the law, the Supreme Court's decisions and public policy?

The four commissioners who dissented from the majority report in the O'Fallon case hold that such would be the effect of the application of the valuation principles heretofore declared by the Supreme Court. The most they ask is that the commisison give an "effectual weight" to enhanced costs; and the majority report itself points out that "since the price revolution brought about by the World War the railways have not had, nor have they sought, returns based on values swollen in harmony with the general price level." That is not to say, however, that the roads do not believe that public policy would be served and that greater reductions in rates would result in the long run from a more liberal policy of rate regulation than the commission has followed.

What the Court Has Said

It is possible to point to many expressions of the Supreme Court which indicate, not that rates should be based solely on present reproduction cost, but only that that factor be ascertained and considered in an estimate of the trend of prices and values which may prevail over a period of years. Also it is not necessary that rates as a whole be changed with every change in value, provided the net return allowed the roads is permitted to follow the same trend as changes in the cost of construction and operation.

The majority report makes a strong argument against the use of some of the extreme figures which might be produced by an application of current price levels as a rate base without qualification, but some of the court's decisions give ground for the belief that it would approve an intermediate basis, and there seems to be no decision in which it has insisted on present cost of reproduction alone as a basis for rate-making.

In the case of Smyth vs. Ames back in 1898 both "original cost" and "present as compared with original cost of construction" were mentioned in the same sentence as among the matters for consideration, and manifestly if both are given effectual weight the resulting basis must be somewhere between the two. Moreover, in the Southwestern Telephone case, as recently as 1922, the court used language which points the way to a use of cost of reproduction figures without using them as an absolute and sole base. After stating that the commission in that case had undertaken to value property "without according any weight" to the greatly enhanced costs of material, labor, supplies, etc., over those prevailing in 1913, 1914, and 1916, and that it is impossible to ascertain what will amount to a fair return without giving consideration to the cost at the time the investigation is made; it also said: "An honest and intelligent forecast of probable future values, made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded such a forecast becomes impossible. Estimates for tomorrow cannot ignore prices of today."

This does not say that valuation and rates should be based solely on present price levels. Perhaps the Interstate Commerce Commission has been so long in the past in its valuation work that it does not readily grasp the idea of making a valuation to endure for some years in the future, but it has certainly estimated into the future several times in deciding that the railroads could probably get along very well without such increases in rates as they had declared would be necessary.

A Recent Case

Even in the recent Indianapolis Water Company case, which has been regarded by some as the most significant recent example, the court approved a valuation somewhat less than that claimed by the company as representing "spot reproduction costs," and although it said that costs as of a period prior to the great rise of prices due to the war do not constitute any real indication of value at the present time, it also said "there must be an honest and intelligent forecast as to probable price and

wage levels during a reasonable period in the immediate future."

The Interstate Commerce Commission, after saying that an application of ratios of enhanced costs would have increased the valuation of the railroad property in existence in 1919 from an assumed figure of 18 billions at 1914 prices to 41.4 bililons at 1920 prices, referred to the reduction in the price level since, which it also assumed to average 25 per cent. This would have brought the aggregate down to some 31 billions, and, although additional property had been added, the total could easily have been reduced by an anticipation that prices were going down further.

The opinion of the Supreme Court in the Minnesota rate cases, decided in 1912, which the commission apparently has followed in valuing land, says that it is the "property and not the original cost of it, of which the owner may not be deprived without due process of law," but it also points to another qualifying factor which would prevent the use of an extreme valuation when it says: "But still it is property employed in a public calling, subject to governmental regulation, and while under the guise of such regulation it may not be confiscated, it is equally true that there is attached to its use the condition that charges to the public shall not be unreasonable." The commission even qualifies the basis which it now proposes by inserting the words "provided traffic is available" in its statement that a fair return will be secured for every dollar that has gone into the property.

The net railway operating income earned by the Class I railroads in 1926, $1,232,000,000, which was 5.13 per cent on a property investment of about $24,000,000,000, was a return of 5¾ per cent on a base of only $21,400,000,000, whereas if the 4 billions since invested be added to the $18,900,000,000 which the commission used as a tentative aggregate in 1920, we would have a present base of $22,900,000,000. The majority of the commission not only declines adequately to recognize cost of reproduction in valuation, but even to so fix rates as to enable the railways to earn what it has held would be a fair return on its own basis of valuation.

Two Suggestions of the Commission

In its 1923 report and also in subsequent reports, including that for 1926, the commisison suggested two amendments to the valuation act, stating that fundamentally "these two suggestions present different theories of valuation." The first provided for bringing a basic valuation up to date by adding or substracting net property changes, and the second provided for an occasional reascertainment of the condition and valuation of the property, "taking into account any changes in such condition or value, and giving due consideration to all the elements of value recognized by the law of the land." In consideration of the first suggestion, the commission said, "the question will arise whether the Congress, in the exercise of its police and regulatory powers, can prescribe an investment or original cost basis for valuation, in ascertaining values for rate-making purposes, that would stand the test of constitutionality." For that reason, it said, it offered its second suggestion, but now it proposes to apply the method which it then said raised constitutional questions. It says it has given consideration to all the elements recognized by the law of the land for rate-making, but cost and depreciation are the only ones to which it has given any discernible weight except as to land, and it certainly does not point to any language either in the statute or in any court decision that directs it to find cost as value.

On what theory of law or economics it believes it can consistently recognize what it would now cost to acquire the land owned by the railways, and at the same time refuse to give any recognition to the present cost of reproducing other railway property acquired or built before the war, it is impossible to conceive.

The developments regarding valuation have put the commission and the railways into positions which are uncomfortable for both of them. The commission is uncomfortable because for years it insisted that Congress give it authority to make a valuation, it being the belief of most of its former members that this would afford them a basis for keeping rates down; and now a majority of its present members find that a valuation made in strict accord with the law of the land would be much larger than was formerly anticipated and would justify substantial advances in rates. The railways are in an uncomfortable position because a valuation made on the commission's basis of actual-cost-less depreciation would be unfair, confiscatory and destructive of railway credit, and yet a majority of the commission seemingly takes the position that there is no alternative to this except a valuation based solely on present cost of reproduction, which would be so large that it would be much more useful as a basis for anti-railway propaganda than for regulation of rates. While the railways have contended for recognition of cost of reproduction, because the law of the land requires it, it is doubtful if there is any railway financier or officer who believes that rates ever would be so regulated as to yield an average return of 5¾ per cent or even more on what it would cost to reproduce the railways at present prices and wages.

Fifteen years ago the railways were opposed to any kind of valuation upon the ground that rates should be so regulated as to enable them to raise adequate capital and that a valuation was not necessary to enable this to be done. The commission was in favor of a valuation that would give due weight to all elements of value until it found that one that gave due weight to cost of reproduction would be too large to suit it, and now it reverses its attitude and instead of saying that a lawful valuation should be made to determine what return should be allowed to be earned, takes in effect the position that the valuation to be made should be measured by the return it would produce, and that cost of reproduction should not be considered because it would make the return too large. The commission's record of 20 years with respect to valuation is so utterly inconsistent that it would be comical if the economic problems involved were not so large and serious.

From the beginning the vital question involved has been as to the return necessary to enable the railways to raise sufficient capital to provide the public adequate service with the greatest practicable economy, and that question could have been answered satisfactorily and constructively at any time within the last twenty years without any kind of valuation if the commission had had the intelligence and courage to so answer it. This has not been done because in the past, as at present, a majority of the members of the commission have been over-zealous in trying to keep rates down by limiting railway profits, and apparently, have never grasped the fundamental principle of railway economics that the most effective way to keep railway rates down is to enable the railways to raise sufficient capital and invest it in all those ways that will tend to reduce operating costs. What the railways and the public always have needed is a commission a majority of whose members were less obsessed with scholastic and socialistic theories regarding the limitation of profits, and better fitted and more disposed to apply sound business principles in the solution of a great business problem.

Looking Northeast Directly Over the Main Street Bridges and the Complicated Track Layout in This Locality

N. Y. C. Eliminates Grade Crossings Under Heavy Traffic

Undercutting network of 13 tracks carrying 220 train movements daily presented unusual construction problems

WHILE many important highway grade crossing elimination projects have been undertaken by the railroads throughout the country of late, it is doubtful if a more complicated and interesting project has been completed during the past year than the elimination of the grade crossings of the network of tracks just east of the east end of the Michigan Central and International bridges at Suspension Bridge, New York. This project, which cost in the neighborhood of $1,500,000, and involved the rearrangement of the track layout and the undercutting of 13 tracks under an average daily movement of 220 trains, was undertaken by the New York Central in May, 1925, and has recently been completed with a record of not having seriously interfered with traffic at any time during the work. This record is of special significance when it is appreciated that the track changes at this point included the installing of 11 double slip and 1 single slip switches, and that excavating for the under-crossings necessitated the general raising of the tracks about 21 in., the removal of about 70,000 cu. yd. of earth, and the driving of 14,648 lin. ft. of falsework piling.

Other important work involved the placing of 926 tons of steel and 4,000 cu. yd. of concrete in connection with three bridges and retaining walls, the installation of approximately 1,885 lin. ft. of sewers, and the laying of about 9,700 sq. yd. of brick and concrete paving in addition to 28,000 sq. ft. of sidewalks. A most important auxiliary to the work at Suspension Bridge, complicating the heavy movement of trains, and yet one which was handled in a most effective manner, was the complete remodeling and the extension of the interlocking and signal systems in this vicinity.

The primary purpose of the work at Suspension Bridge was to eliminate the crossing of 10 tracks over Main street at grade which, owing to its heavy travel and the large number of train movements, was particularly dangerous, requiring the employment of crossing watchmen at five points for periods of from 16 hours to the entire day. In connection with this work, however, it was also planned to eliminate the three-track grade crossing in Depot avenue which is the main thoroughfare to

Preparing the Pavement Sub-Grade on the South Approach to the Main Street Bridges

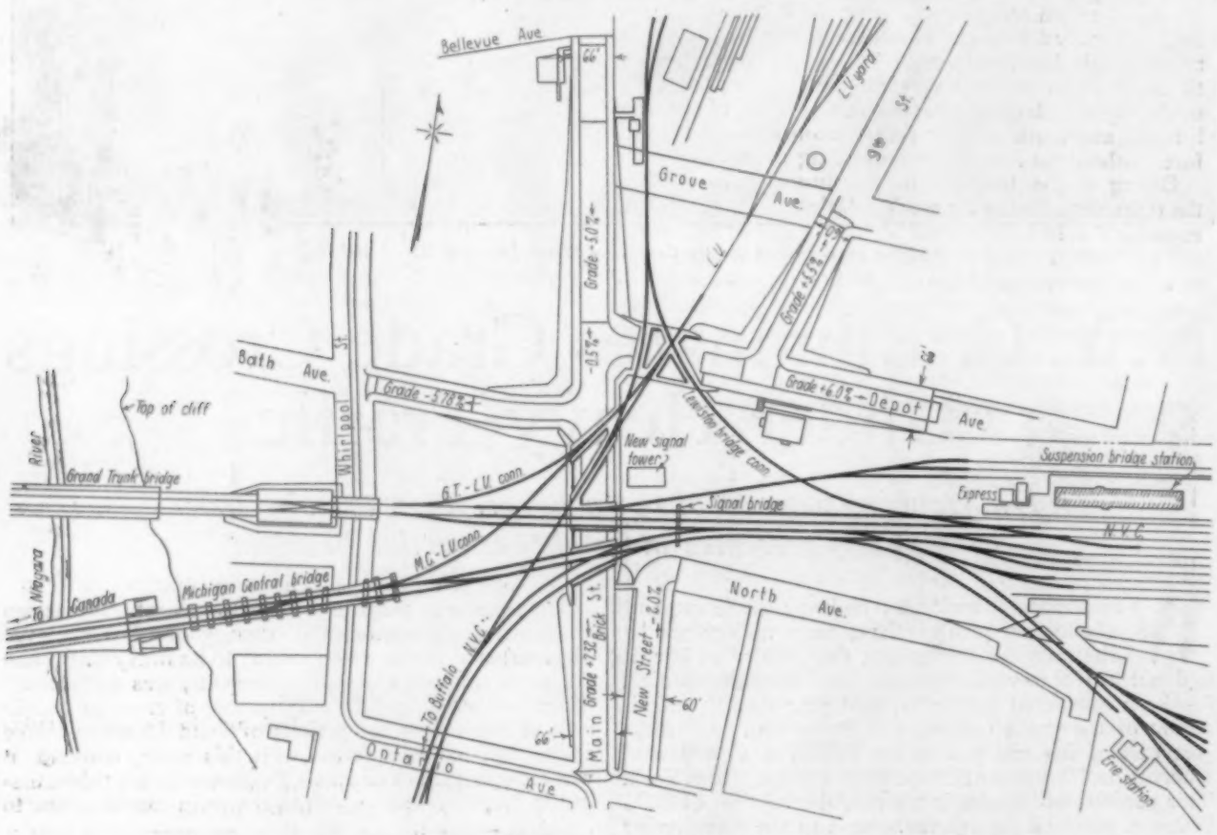
the passenger station at Suspension Bridge. The heavy traffic in Main street, which averages several thousand vehicles a day, is due for the most part to the fact that this street is one of the most highly traveled thoroughfares to Niagara Falls from Buffalo and the south, and also, that it is on the main route of a large number of funeral parties to and from a cemetery some distance north of the crossings. While the most serious delays

and inconveniences at these crossings were encountered by the street traffic, still it was not infrequent that trains were delayed, which seriously affected the already congested movements in this territory.

Network of Tracks Complicates Project

The tracks crossing Main street, which lies at right angles to and approximately 650 ft. east of the east ends of the Michigan Central and Canadian National bridges, include the two bridge tracks of the Michigan Central, the two bridge tracks and an additional lead of the Canadian National, the two tracks of the New York Central's Niagara branch, and connections from the tracks on all three of these tracks, two of which are connections to the Lewiston branch of the New York Central and the other, the yard lead of the Lehigh Valley. The only other grading in connection with this project was incident to the laying out of a new street about 300 ft. long, adjacent to and practically parallel with Main street, to form a west end outlet to North avenue which, owing to the new arrangement, could not be made to intersect Main street because of the necessity of constructing an overhead bridge at this point.

The grading consisted of approximately 70,000 cu. yd. of clay and gumbo, no rock being encountered. All of this material, in the open, was removed by means of



The Track Layout Is Complicated

of each of these roads to the Lehigh Valley's property lying northeast of the crossings. Complicating the situation at this point is the widely varying angles at which these tracks cross Main street and the fact that through this territory there are a large number of switching and turning movements daily, not alone by the roads mentioned but also by trains of the Pere Marquette and the Erie.

In eliminating the grade crossings over Main street, it was necessary to detour all highway traffic to Whirlpool street which passes under the Michigan Central and Canadian National tracks, and to make a cut in Main street for a distance of about 1,100 ft., 22 ft. deep at the lowest point. This in turn necessitated the cutting down of the intersecting streets, Bath avenue and Depot avenue, for 300 ft. and 475 ft. respectively, and also the grading of 250 ft. in 9th street which intersects Depot avenue. The lowering of Depot avenue made necessary the elimination of the three-track grade crossing over this avenue near its intersection with Main street which, however, was highly desirable owing to the heavy movements crawler tread cranes equipped with drag line buckets, which loaded direct into the motor trucks that were used to carry it away. The most difficult part of the grading was the removing of the earth from beneath the falsework supporting the network of tracks, and from between the various intersecting falsework trestles which in most cases did not provide room enough for the operation of the drag line bucket or the motor trucks. In accomplishing this work it was necessary, therefore, to remove all of the dirt from between trestles with clam shell buckets, and that beneath the trestles by means of picks and shovels. This, to a large extent, necessitated several handlings of the material, particularly that from beneath the trestles, which was first thrown out into the open and then removed by a clam shell bucket to a point where it was within the reach of the drag line.

Undercutting Required Extensive Falsework

Second only to the difficulty encountered in this part of the grading was the raising and rearrangement of the tracks over Main street and the driving of 14,648 lin.

ft. of piling for the falsework, all of which was done under traffic. The principal track changes in connection with the elimination of the grade crossings of Main Street were the moving northward and shortening of the New York Central's Niagara branch line connection with the bridge lead tracks of the Michigan Central, the removing of the Erie's track connection out of North avenue to a point some 650 ft. east, and the relocation of the New York Central's Lewiston branch connection from the station tracks. These changes were made not alone to improve operating conditions at this point, but also to preclude the construction of an additional bridge in the case of the Niagara branch connection, and the construction of the more complicated bridges which would have been caused by the old layout of the other two tracks. In order to facilitate the construction of the bridges built, however, these changes were not made until the bridges were completed. In this manner, the minimum of piling was driven on the sites of the new bridges, and much of their construction was done, therefore, without the interference of piling or traffic.

Owing to the frequent train movements over all of the tracks involved in the work, which made it impractical to employ a locomotive pile driver or a pile driver car with a work train, it is interesting to note the use made of a locomotive crane equipped with pile driver leads and operating on its own sectional track. With this equipment, which could be moved about between the railroad tracks at will, all of the piles were driven without interfering with traffic other than the occasional rerouting of a train. In all, a total of 95 bents were driven which contained from 4 to 27 piles each, depending upon the width to which it was necessary to carry the supporting structure. The practice followed for the most part was that of spotting the crane between the various tracks so that when traffic prevented the driving of piles in one section of the falsework, it could readily shift its position slightly and proceed to drive the piling in the bents of another section of the falsework. In this manner, minimum delay was caused in the driving of the piles, which under other circumstances would have seriously retarded the work and unavoidably interfered with traffic.

Undercutting the Tracks Necessitated the Driving of 14,648 Lin. Ft. of Falsework Piling

In order to facilitate the excavation work, the installation of sewers and the construction of bridge abutments and column piers, all of the pile bents were driven parallel with the center line of the street, the spacing between them ranging from 9 ft. 8 in. to 13 ft. 3 in., depending upon the nature of the layout and the location of the bridge abutments, piers and sewers, with which they could not be allowed to interfere. All of the piling, capping, stringers and bracing used in the construction of the falsework was long leaf yellow pine, and all connections were made with ¾-in. bolts and ogee washers, drop bolts being used to connect the stringers to the caps and the caps to the piles so that these members could be removed in the minimum of time when the steel was to be erected.

A Clam Shell Excavating in Cramped Quarters and Placing the Material Within Reach of a Drag Line Bucket

Track Layout Necessitates Irregularly Shaped Bridges

The bridges necessitated by the elimination of the grade crossings are three in number, two of which are very irregular in plan, being in reality three distinct bridges in each case, the floor structures of which are connected together to provide for the intersection of tracks. These bridges are the one over Depot avenue and the northerly bridge over Main street, each of which provides for track crossings of the street at three widely varying angles. In spite of the varying shapes of the three bridges, all are of the same general type of construction, having heavy I-beam floor stringers and deep built-up cross girders at the curb lines, and also at the center line of the street in the case of the Main street bridges, which rest on shop fabricated steel columns. The ends of the bridges are in all cases supported on gravity type concrete abutments which, together with the several short stretches of retaining walls, involved the placing of approximately 4,000 cu. yd. of concrete.

The particular advantages of this type of construction as used in these bridges are that it lent itself readily to the very irregular floor design necessary to meet the conditions presented, and also that it afforded a minimum depth of floor structure, which permitted a minimum amount of excavation to secure the 13-ft. clearance desired above the street pavements.

With 66 ft. between the faces of the bridge abutments

at Main street, this arrangement provided two 19½-ft. roadways separated by a center row of columns, and clear walkways 9½ ft. wide on each side of the street between the abutments and the columns at the curb lines. In Depot avenue the distance between abutments is likewise 66 ft., but owing to the fact that traffic is lighter there than on Main street, the center columns have been omitted and a single clear roadway 30 ft. wide is provided with 15½-ft. walkways on each side.

Deck Structures Similar

The deck structures of all of the bridges are likewise similar in construction, being built up of 7/16-in. steel deck plates over the tops of the floor stringers, above which is a 6-in. course of concrete, waterproofed, and then a sand cushion and a 2¼-in. course of hard burned brick, the bricks extending only directly under the tracks to provide protection to the waterproofing against the cutting action of the rock ballast. The decks in all cases are adequately drained by the slight pitches provided in the concrete course which direct the water to outlets. These in turn convey the water to the gutters and down spouts, the latter being located close to the supporting

Completed Tracks Looking West Towards Suspension Bridge Station. Showing Canadian Grand Trunk Tracks with Connection on Right. (These Also Are Crossing Over the Main Street Bridge)

columns and provided with a hand hold and trap for cleaning.

Aside from the structural advantages contained in the bridges, it is evident that an attempt has been made to enhance their appearance, this having been accomplished through the extension of the concrete floor slab up over the top of the outside girders, terminating in an ornamental concrete fascia along the top which is surmounted by a double pipe railing supported by attractive cast iron posts. Other evidences of this appear in the rounded ends of the cross girders and the gracefully curved brackets between these girders and the bridge columns.

Auxiliary Work Is Also a Large Item

The auxiliary work in connection with this project involved the removal of the old sewers in the streets lowered and the laying of a total of approximately 1,885 ft. of new 10-in., 12-in., 15-in., 18-in. and 24-in. sewers, the greater portion of which were installed in advance of the completion of the grading work so as to provide for ample drainage of the new area excavated. It also included the laying of 6,700 sq. yd. of brick pavement in Main street, the placing of 3,000 sq. yd. of concrete paving in Depot avenue and Ninth street, the installation of 45,000 lin. ft. of concrete curbing, and the laying of about 28,000 sq. ft. of concrete sidewalks.

The new signal and interlocking systems installed at Suspension Bridge, include 52 three-position signals of the searchlight color light type, 57 electric switch machines, and an electric interlocking plant of 130 working levers which is housed in a new brick and concrete signal tower located just east of the most northerly bridge built over Main street. From this tower control is had over all train movements within the immediate vicinity of Suspension Bridge, and also for about two miles south on the Niagara branch and about one mile north on the Lewiston branch. The new installation replaces one of the low pressure pneumatic type with semaphore signals, which was installed in 1900 when the New York Central was getting ready to handle the Pan American Exposition business.

One of the most interesting features in connection with the signal work was the change-over from the old pneumatic system to the new electric system, which had to be effected with the least possible interference to traffic, and at the same time insure the safety of every movement. This work was not undertaken until both bridges over Main street were completed and the track changes made in connection with them, but with this work out of the way, all of the pneumatically operated switches were converted into hand operated switches through ground-throw switch stands. By carefully planning and considerable preliminary work, this change was made, complete, in about two and one-half hours, all of the switch stands having been installed in advance, ready to be connected up to the switch points as soon as the machine connecting rods were released. This change-over was made on June 8, 1926, from which date, until September 17, the necessary switchmen were employed, working under an assistant signal supervisor acting in the capacity of an assistant yardmaster. During this period the new installation was put in place, and on the latter date mentioned, the change-over from hand to electric operation was effected, this being accomplished in about one-half hour. The new electric interlocking was manufactured and installed by the General Railway Signal Co., Rochester, N. Y.

Ladder Tracks Laid

The track work auxiliary to the grade crossing elimination was confined largely to the layout east of Main street where, in order to increase the flexibility of train movement in this highly congested territory, new ladder tracks and track connections were laid out which involved the installation of 11 double slip and 1 single slip switches. The interesting features of this work lie for the most part in the fact that all of these switches were assembled complete, tie plated and spiked to the ties, on sites near the points where they were to be installed, and then lifted bodily into place by a Brown hoist and a locomotive crane. By accomplishing this in this manner, all of these switches were installed in a minimum of time, with but little rerouting of traffic and with but a single train delay of approximately 2½ hours.

The work at Suspension Bridge, the cost of which was borne by the New York Central, the Erie, the city and the state, was done by the New York Central, under the general supervision of G. W. Kittredge, chief engineer, who retired on January 1; J. W. Pfau, engineer of construction; J. G. Brennan, engineer of grade crossings; W. C. Maurice, district engineer; and W. H. Elliott, signal engineer. The work in the field was in direct charge of L. S. Shupp, assistant engineer. All of the grading, bridge work, sewer changes and paving was done by the Walsh Construction Company, Davenport, Iowa, which company was represented on the ground by Earl Heber. The track raising and track changes were handled by railroad forces.

D. & H.-B. R. & P. Lease

B. & O. representatives appear at supplemental hearing in opposition and suggest closer relationships with soft-coal carrier

WASHINGTON, D. C.

A SUPPLEMENTAL hearing on the application of the Delaware & Hudson for authority to acquire control of the Buffalo, Rochester & Pittsburgh by lease and to operate over the Pennsylvania, under a trackage right contract, from Buttonwood to Dubois, Pa., was held before Examiner Davis of the Interstate Commerce Commission on April 25 and 26. Although the Delaware and Hudson's option to lease the B. R. & P. expired on February 28, before the commission had made a decision on the original application, the Delaware & Hudson continues to press its application for approval by the commission of such a lease, and in a letter recently addressed to the commission H. T. Newcomb, general counsel of the D. & H., said that failure of the pending application "would be a severe blow to any plan for the development of a fifth system in eastern territory." Favorable action on the application, subject to certain conditions, he said, would not commit the commission to the suggested fifth system, for the reason that every further step in putting together such a system would have to be presented to the commission, but inaction might make it forever impossible for the commission to favor a fifth system, by rendering it impossible to formulate a workable plan. Also, L. F. Loree, president of the Delaware & Hudson, in testifying at the hearing said that he stood ready to execute a lease of the B. R. & P., while the latter at the hearing gave no indication of its present attitude.

Over the objections of R. Marsden Smith, general attorney of the Baltimore & Ohio, which with the New York Central has opposed the application, the D. & H. introduced witnesses to testify as to the operating and traffic advantages they said would result from the operation of the two roads as a single system, using the Pennsylvania trackage. Mr. Smith took the position that as the trackage contract was contingent upon a lease and as the option had expired such testimony would be irrelevant, but Examiner Davis allowed the testimony to be introduced.

E. O. Marting, president of the Witherbee Sherman Company, operating a furnace at Port Henry, N. Y., testified that the proposed route would be of benefit to his company in assisting it to develop additional markets and that a route under a single management would give better service than one made up of several railroads. Under cross-examination by George M. Shriver, vice-president of the Baltimore & Ohio, he said he did not know that the B. & O. was involved in the proposed route to Pittsburgh.

J. E. Roberts, superintendent of transportation of the D. & H., testified that a saving of $411,000 a year could be effected by elimination of empty car mileage between the D. & H. and B. R. & P., by utilizing the cars for loads of bituminous coal eastbound and anthracite westbound. He also estimated a saving of $1,125,000 in capital investment in cars. James M. Martin, chief engineer of the D. & H., testified that the line of the Pennsylvania over which it is proposed to operate, is in good condition and has a capacity more than ample for the increased traffic which the Delaware & Hudson expected to put over it. W. E. Eppler, comptroller of the D. & H., gave estimates of the traffic and revenue expected to result from unified operation. J. W. Roberts, general superintendent of transportation of the Pennsylvania, also testified. The witnesses were cross-examined both by representatives of the B. & O. and by Clyde Brown, general solicitor of the New York Central.

Mr. Loree, in explaining the purpose of the trackage contract with the Pennsylvania, said that he had formerly relied on the traffic arrangements with the four lines which connect the D. & H. and the B. R. & P., including the New York Central, but that after the latter in its brief had raised the objection that there was no physical connection and the examiner had made that the principal ground of his objection to the application, he had thought that perhaps he could not rely on traffic agreements, although 85 per cent of the ton-mileage of the country moves under such arrangements. Therefore, especially in view of the "violent opposition made by the New York Central and the Baltimore & Ohio" to the proposed Harriman line across Pennsylvania, he had finally worked out the plan for a trackage contract, which would make the two properties an integral property, and for moving over it the coal and ore which he had expected would have moved over the New York Central. When Examiner Davis asked Mr. Loree if the Delaware & Hudson was ready to execute a lease of the B. R. & P. on the same terms as had been proposed he replied: "Yes. Right away."

P. R. R. "Has Since Done Penance"

Mr. Brown asked if the Pennsylvania had not opposed the cross-Pennsylvania line as well as the New York Central and B. & O., and asked why he had not included them in speaking of the "violent opposition." Mr. Loree replied that all three lines had shown a very selfish attitude but that "the Pennsylvania has since done penance and has treated us with a more friendly attitude." Mr. Shriver asked if, with a lease of the B. R. & P., and the trackage contract there would be any further necessity for the cross-state line. Mr. Loree said he had not discussed it recently with the Harriman people but that he assumed they were "going ahead" with the application to the Interstate Commerce Commission.

On the following day Mr. Shriver and J. J. Ekin, comptroller of the Baltimore & Ohio, testified in opposition to an approval of the application, on the ground that other routes are available more favorable than those proposed via the D. & H. and B. R. & P., that the lease would disturb long-existing relations between the B. & O. and the B. R. & P., which the B. & O. would like to make closer and convert a friendly connection into an earnest competitor. Mr. Shriver said that the lease would also interfere with, if not prevent, the development of a new short low-grade route between Chicago, Philadelphia, New York and New England via the B. & O. and B. R. & P. He pointed out several advantages to result from a closer relation between the B. & O. and B. R. & P., which he said need not go to the extent of ownership.

Using a map Mr. Shriver compared the various routes between Chicago and the East, saying there are now seven available routes via the Delaware & Hudson

shorter than the possible route via Pittsburgh or by the trackage and B. R. & P. route through New Castle.

B. & O. Would Like Closer Relationships

Regardless of the legal status of the matter, he said, the Baltimore & Ohio has felt it inappropriate to approach the B. R. & P. while the question was pending before the commission, but should the commission conclude the subject in a way to leave the parties free to do so, the Baltimore & Ohio would desire to take up negotiations with the B. R. & P. looking to a closer co-ordination of the Baltimore & Ohio and the B. R. & P., either through a lease or upon some other mutually satisfactory basis.

"The proposed trackage does not appear to offer any more advantageous route than those now existing between New York and Chicago," Mr. Shriver said. "On the other hand it would seem possible, with the co-ordination of the Buffalo, Rochester & Pittsburgh with the Baltimore & Ohio, to secure to the public a new and most advantageous route between Chicago and New York with a greatly improved line over that now available.

"The route from Chicago to New York would be 900 miles as compared with the Baltimore & Ohio's present route, in conjunction with the Reading, of 983, while the route from Chicago to Boston would be 1,140 miles, as compared with the present route of 1,225, or 85 miles shorter. Not only would be public be advantaged directly by the use of this shorter line, but there would be the indirect benefit through the economies that would be realized in handling the existing traffic now passing from points west of Butler to and from Reading-Central Railroad points and beyond, including New York.

"In addition to the direct facility and economy which would be realized by the use of this proposed new route, it would afford relief to the Baltimore & Ohio's line between Pittsburgh and Baltimore which at times in the past would have been helpful and which in the not distant future may become important. The Baltimore & Ohio has recently put in a full line of rates from points on and beyond the Wheeling & Lake Erie to the East, and has also established some east-bound rates in conjunction with the Pittsburgh & West Virginia Railway.

"That a large business from the Pittsburgh district to the East is anticipated, is indicated by the application which has been pending for some time before the Interstate Commerce Commission for authority to construct a new low-grade line between Pittsburgh and Easton on the Lehigh Valley, and the recent application of the Pittsburgh & West Virginia for a certificate to construct a line from near Pittsburgh to a connection with the Western Maryland at Connellsville which has been roughly estimated by our engineers to cost from $20,000,000 to $25,000,000 or more. While in our opinion the construction of neither of these lines is required at present, it indicates the feeling that the traffic through the Pittsburgh gateway is destined to increase, and it is therefore urged that the important possibility of a short low-grade relief line via the Baltimore & Ohio in conjunction with the Buffalo, Rochester & Pittsburgh, Reading and Central Railroad systems, be given most serious consideration.

Large Interchange of Traffic with B. & O.

"Because of the large interchange of traffic already built up between the Baltimore & Ohio and the Buffalo, Rochester & Pittsburgh and the possibilities of the expansion of the interchange of traffic between the territory served by the Baltimore & Ohio and the areas reached by the Buffalo, Rochester & Pittsburgh, and because through the medium of the Buffalo, Rochester & Pittsburgh an important short low-grade through route may be secured between Chicago and New York and New England, we are of the opinion that these relationships should not be disturbed, but that if and when opportunity offers they should be closer cemented and the operations further co-ordinated.

"Under the several contracts between the Baltimore & Ohio and the Buffalo, Rochester & Pittsburgh, the latter was given the right to use a very substantial part of the facilities of the Baltimore & Ohio and became an originating carrier especially in a very important industrial area of Pittsburgh, and it also was given the privilege of carrying its traffic over the lines of the Baltimore & Ohio between Butler and New Castle.

"In giving to another railroad access over its own lines and into its own territory the Baltimore & Ohio naturally sought to prevent those rights being sold or transferred to a railroad or railroad system substantially different from that of the Buffalo, Rochester & Pittsburgh as it existed on January 1, 1918. For though difficult to anticipate, it was easy to foresee that the transfer of these valuable rights to another system might seriously affect the Baltimore & Ohio. It was with this object in mind that I insisted Section 15 should be placed in the contract as a necessary protection and it would seem that the action of the applicant in including these contracts in the lease, and asking the approval of the commission of that lease is to ask the commission's agency in defeating that object.

Transfer of Rights

"As I have said, the result of the approval of this lease, even though no larger system follows after it, and the transfer of the rights under the contract to this new system is clearly in conflict with the purposes of Section 15. The proposed lease expressly attempts to transfer these four contracts to the Delaware & Hudson and there is an express covenant to do all that may be possible to effect their complete transfer to the Delaware & Hudson.

"As I have very clearly in mind the purpose which led me to insist that Section 15 should be incorporated in the contract, with which in my judgment the results of the lease would obviously conflict, the Baltimore & Ohio would feel that if the lease should be approved the parties to it would thus automatically, and by their own action, disable themselves from continuance as a Pittsburg and New Castle line."

Claude La Porte, attorney for the Buffalo, Rochester & Pittsburgh, put into the record copies of correspondence between the Delaware & Hudson and the B. R. & P., relating to the option which had been given the latter for the lease. This showed that the option was to expire on July 1, 1926, if the commission had not passed upon the Delaware & Hudson's application by that time, but the option was later extended to the end of the year and again to February 28, after which the B. R. & P. directors declined to renew it. Nothing was said as to the attitude of the company toward a lease if the commission should now decide that the B. R. & P. ought to be combined with the D. & H.

THE DEPARTMENT OF PUBLIC WORKS of the State of Washington has taken steps toward the formulation of a definite policy for the future elimination of grade crossings between public highways and railroads, and information has been requested from each railroad. The railroads will be called to confer on the apportionment of costs between the state and the railroads. The department will ask that the railroads, in the future, bear a portion of the cost of construction when a highway is relocated on a new grade in such a manner that it is entirely separated from the railroad line and eliminates one or more grade crossings.

New Madrid, Mo., on the St. Louis Southwestern, Under Water After Levee Broke.—International News Reel.

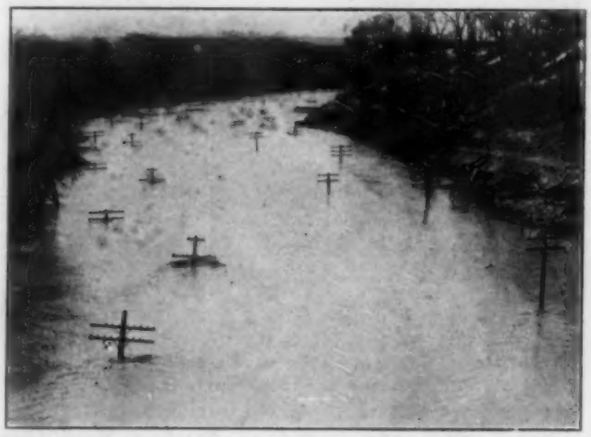
Railways Fighting Record Flood

High water causes temporary interruptions to service; thousands of men employed to repair damage

THE third week of the record flood of the Mississippi River and its tributaries finds railroad service returning to approximately normal conditions north of Cairo, Ill. The crest of the flood is now approaching Helena, Ark., and ample warning has been given to the valley below the crest. The height of the flood will not reach the lower river until May 8 to May 10. The southern portion of the river is now high, but not sufficiently so as to cause alarm for the present. Reports from government engineers and others conversant with flood prevention in this district indicate that the situation, though alarming, is under control, and it is hoped that further serious levee breaks may be avoided. The fact that the flood is entirely without precedent as to size, renders it difficult to predict, with any degree of certainty, just what the result will be, although the breaks in the upper river levees will relieve the pressure somewhat.

The situation in southern Illinois, western and southeastern Missouri, southeastern Kansas, eastern Oklahoma, Arkansas and western Kentucky and Tennessee, is now well in hand and no further difficulty is expected in this territory. The damage caused by the serious levee breaks along the Mississippi, Ohio, White and St. Francis rivers in this territory is being repaired as fast as the water recedes. The railroads affected have concentrated thousands of men in the flood district, many of whom were transferred from other divisions.

The situation at Cairo, Ill., and vicinity was particularly acute for a few days, and caused the suspension of passenger service on the Mobile & Ohio between St. Louis and Mobile and required the detouring of that railroad's freight trains, besides causing delay to the through trains of the Illinois Central. The flood in this district threatened for a time to stop all railway service through Cairo and across the Ohio River bridge, but it has abated very materially and is now well under control. At the height of the flood, Mounds, Ill., a large yard on the Illinois Central just north of Cairo, was partly submerged and the joint main line of the I. C. and the M. &



St. Louis-San Francisco Tracks Flooded by Blue River in Swope Park, Kansas City, Mo.

O. from Cairo to Wickliffe, Ky., was under several inches of water. With the passing of the crest, however, most of this track is out of the water.

At the time the water was highest in this district, it came up over the steps of the coaches, at many places. This necessitated careful operation, for there was not

only the danger of crumbling embankments, but there was also the further hazard of trains being derailed because of driftwood along the tracks. The flooded section of the track, as well as other tracks running through flooded areas but not submerged, have been patrolled constantly and every possible precaution taken to insure

P. & A.

Unloading Sandbags at Cairo for Levee Reinforcement

safety and keep the line open. Trainmasters, road foremen of engines and other responsible officers are riding each train through the flooded areas.

But the railroads have by no means confined themselves to repairing the damage. They have been very active in preventing the inroads of the flood as far as possible. The Illinois Central, for example, has had

Underwood & Underwood

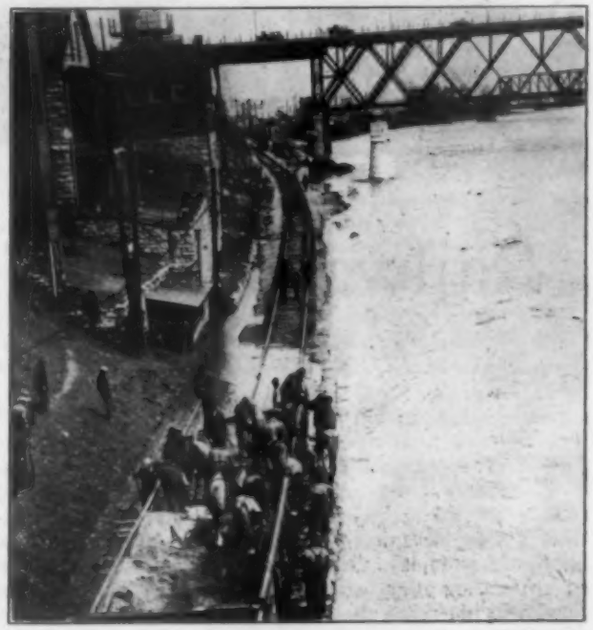
Water Flowing Under Y. & M. V. Tracks at Scott, Miss., Shortly After Levee Broke. These Tracks Are Now Under 10 Feet of Water

500 men working steadily for some days, filling sandbags on the Chicago lake front, and shipping them to the flooded cities, where they are used in reinforcing railway embankments and municipal and state levees.

In the Arkansas section, the situation was so serious as to interrupt service entirely from Memphis to the southwest and St. Louis for several days. In addition, service to Kansas City was interrupted for a short time. Little Rock was almost entirely without railway service for a time and Pine Bluff had only one line open.

Since the flood abated, the affected lines have resumed normal service in practically all cases. Through service has been re-established to all points and the only lines now out of commission are relatively unimportant branch lines. Service is still somewhat affected in eastern Oklahoma, but late reports indicate that the improvement in this section is rapid.

A break in the Mississippi River levee north of Greenville, Miss., at a point called Stops Landing, has caused the most serious situation to be faced at present, from the standpoint of railway service. This break caused much damage to the railways entering Greenville, which is now entirely without railway service, and it was neces-



The Missouri Pacific Fighting the Kaw River in Missouri

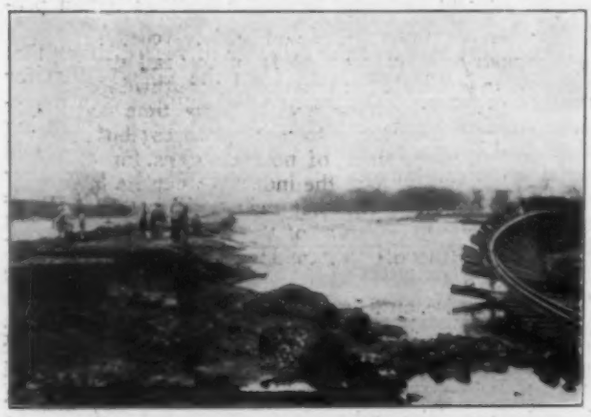
sary to suspend through service between Memphis and New Orleans via the Y. & M. V. through Greenville. The Illinois Central service between those points is not affected, since the main line of that road runs through central Mississippi, many miles from the river. The Columbus & Greenville is only able to operate trains as far as Indianola, Miss., east of Greenville, and late reports indicate that this town is also under water.

New Orleans had a foretaste of flooded conditions when a 14 in. rain fell there on April 15. For three days a large portion of the city, including part of the business district and some of the freight stations, was inundated by several inches of water, with much damage. The condition of the levees at New Orleans, La., is causing much alarm and nearly 2,000 men are engaged in reinforcing them with sandbags, bulkheading them at weak points and otherwise preparing for the flood. The railways entering New Orleans are assisting in this work, as well as in protection work at other points in Louisiana. Some slight damage was done to the tracks of the I. C. along Lake Pontchartrain during the New Orleans storm by the wind lashing the lake over the tracks, but it was repaired without delay.

The only rising water north of the flood crest is now

in the Illinois river, which has been causing considerable damage in the vicinity of Beardstown, Ill., and interrupting railway service in that vicinity. This will have little effect, however, on flood conditions on the Mississippi river.

In all, it is estimated that there are 9,500 sq. miles under water in the lower Mississippi valley. This area is



Flood Havoc on the Rock Island in Oklahoma

growing daily as minor breaks occur in various levees and as the rising river sends additional water through the levees already broken.

The following statement shows the damage to railroads since the floods began. In most cases, the damage has been repaired, temporarily at least, and normal, or nearly normal service resumed:

Arkansas Midland: Large section of tracks flooded between Holly Grove, Ark., and Duncan, Ark.

Atchison, Topeka & Santa Fe: Washouts in the vicinity of Winfield, Kan., necessitated temporary detours, as did overflow near Winfield, Kan. Service on one track of double track line interrupted by a slide along the Missouri river at Sibley, Mo.

Chicago, Burlington & Quincy: Little affected, except that main line in North St. Louis was, for a time, under three or four inches of water for a distance of one mile.

Chicago, Rock Island & Pacific: Memphis-Little Rock service temporarily interrupted by flood and washouts in the Cache River bottoms in Arkansas. Service through Wister, Okla., was also interrupted by reason of the tracks there being overflowed by the Poteau River.

Columbus & Greenville: Service into Greenville, Miss., suspended, account of levee break at Stops Landing.

Illinois Central-Yazoo & Mississippi Valley: Mounds, Ill. yard partially under water. Main line under water north of Cairo and between Cairo and Wickliffe, Ky. Necessary to detour trains over Paducah-Cairo branch via Fulton, Ky., because of Ohio River overflow. Service somewhat hampered on the main line, but never entirely interrupted. The break of the levee above Greenville, Miss., cut the Y. & M. V. river line from Memphis to New Orleans in two and interrupted the service. Only local trains being operated north and south of the break.

Kansas City Southern: Fill washed out near Benson, La., with water over the tracks at several places for a distance of 20 miles north of the washout. Water in the Arkansas River and its tributaries reached the flood stage April 14, and covered the K. C. S. branch into Ft. Smith, Ark., for a distance of half a mile south of Poteau River bridge and the embankment was washed out in some places. A portion of the main line near Redland, Ark., was also washed out, while about a mile and a half of the main line was covered.

Louisiana Ry. & Navigation Co.: Late reports indicate a new break in the levee at East Point, La., Red River parish, with some interruption to service.

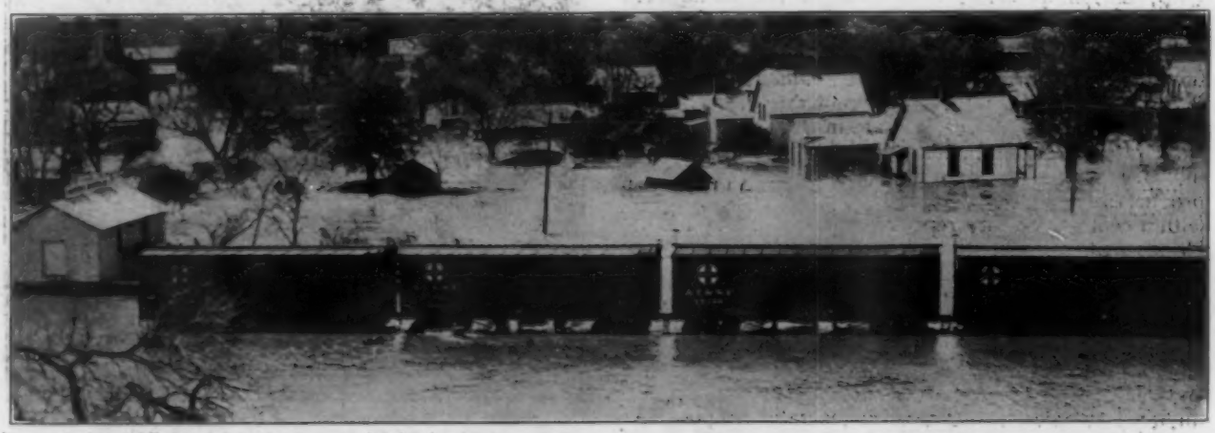
Missouri & North Arkansas: Yard flooded at Harrison, Ark., and three bridges washed out between Harrison and Marshall. The track is also flooded at Devue, Ark., and train service was practically suspended for a time.

Missouri-Kansas-Texas: Washouts experienced in the vicinity of Iola, Kan., with some interruption to service because

Cars Holding Down Kansas City Southern Bridge in Missouri

of the Verdigris River flood in southeastern Kansas and Oklahoma. The Neosho branch flooded. All through service now on a normal basis. Washouts were caused on the main line at Kimbell, Kan., and St. Paul.

Missouri Pacific: Washouts in the vicinity of Iola, Kan. Some difficulty encountered at Kansas City, with the Missouri, the Kaw and the Blue rivers. The Blue River flooded the tracks through Swope Park with some 15 ft. of water. The south half of the Baring Cross bridge over the Arkansas River at Little Rock, Ark., was swept away. This line, however, has another bridge at Little Rock, which remained in service. A bridge over the Little Red River near Judsonia, Ark., was



P. & A. Photo

Santa Fe Tracks Under Water at Guthrie, Okla., Near Cottonwood River

washed out. The Memphis-Little Rock main line was under water at Kensett, Ark., and this service was temporarily interrupted. Tracks were also under water between Cotter and Newport, Ark., and at Osage, Mo. Other washouts occurred at Popular Bluff, Mo., and McCrory, Ark. Only a few local points are under embargo at present.

Mobile & Ohio: Main line severed between Tamms, Ill., and Cairo and it is necessary to detour freight trains via Murphysboro and the Illinois Central. Until the water recedes it is impossible to estimate the extent of the damage.

St. Louis-San Francisco: Trestle washed out near Marked Tree, Ark. Tracks in the vicinity of Cape Girardeau, Mo., under 51 in. of water, due to break in levee above New Madrid, Mo. The tracks were also flooded at Wister, Okla., by the Poteau River. Washouts occurred at Winslow, Ark., and Bengal, Okla. Through service has been re-established on practically a normal basis.

St. Louis Southwestern: Service interrupted by the St. Francis River flood in the vicinity of Campbell, Mo., and by the White River flood near Clarendon, Ark. Tracks were under water in several places in the vicinity of Pine Bluff. Service rapidly returning to normal.

Wabash: Service cut on branch between Keokuk, Iowa and Bluffs, Ill., account of high water. Also necessary to detour Omaha-St. Louis trains because of high water between Summer and Brunswick, Mo. These interruptions did not last more than a few days.

Reduced Livestock Rates Are Proposed

WASHINGTON, D. C.

AN interpretation of the Hoch-Smith resolution as requiring a rate on livestock from Chicago to New York two cents per 100 lb. less than a "maximum reasonable rate under section 1 of the Interstate Commerce act," because of the depressed condition of the livestock industry, is recommended to the Interstate Commerce Commission in a proposed report submitted by Examiner Chester E. Stiles in Eastern Livestock Cases of 1926 and several related formal complaint cases, made public on April 21.

The examiner finds the resolution to mean that a rate made "upon the lowest possible lawful basis compatible with the maintenance of adequate transportation service, for the purpose of promoting the freedom of movement of a commodity produced by an industry which is suffering from a general depression" may be quite another thing from a "maximum reasonable rate" under Section 1. After an exhaustive analysis of evidence relating to the cost of service and other conditions affecting the livestock and meat rates, he expresses the judgment that a "maximum reasonable base rate" from Chicago to New York on livestock under Section 1 would be 50.5 cents; but he proposes reductions in the rates from points in central territory to points in trunk line and New England territories and also from certain points in Kentucky and from Nashville, Tenn., to the same destinations, based on a rate of 48.5 cents from Chicago to New York, in place of the present rate of 56.5 cents, which is regarded as the key rate in the eastbound livestock rate structure; this because of the condition of the industry and to broaden the markets of the livestock producers. A scale of rates is also proposed to apply within central territory representing reductions of about 15 per cent.

At the same time the examiner recommends a finding that rates on fresh meats and packing house products from packing points in central territory, and from the Mississippi river crossings, either locally or proportionally as factors on shipments from beyond, to trunk line and New England territories, are not unreasonable or unduly prejudicial in relation to the rates proposed for application on livestock.

As to these rates the examiner says: "In this proceeding there is no evidence of a depression in the meat packing industry entitling it to the special consideration which the Hoch-Smith resolution directs shall be given to industries suffering a general depression" nor "evidence which convinces us that fresh meats and packing house products will not continue to move freely under the adjustment resulting from the findings herein proposed."

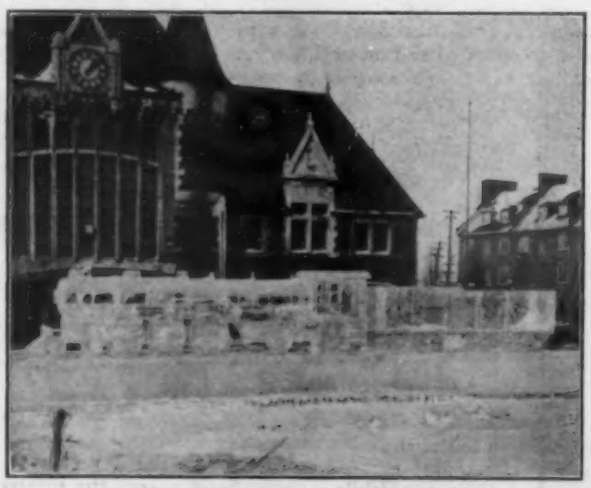
The report says that the evidence of record shows that the industry was prostrated from the fall of 1920 for nearly five years. "The western and southwestern ranchmen suffered most severely. At the time of hearing there had been a return to normal prices; but it would require the continuance of normal prices for a number of years, to again place the industry upon its feet. It is clear from the evidence that reductions in the rates will increase the buying power of the eastern buyers. * * *"

Regarding the effect of the Hoch-Smith resolution, the examiner said:

The commission has permitted carriers to maintain rates lower than the maximum reasonable rates for the purpose of meeting competition of more direct lines, and for other purposes. The test is that they shall not result in undue prejudice and preference, and that they shall be high enough to cover the cost of rendering the service plus some return on the investment. Section 3 of the act is modified by the Hoch-Smith resolution. Therefore a relationship between two rates might be found unduly prejudicial and preferential under Section 3 of the act, yet not unduly prejudicial and preferential where the lower of those two rates is made under the requirement of the Hoch-Smith resolution.

The relationship which will result from the livestock rates herein recommended in the light of the resolution, and the existing rates on packing-house products and fresh meats, will not be in violation of Section 3 of the act when viewed in the light of the Hoch-Smith resolution.

THE NATIONAL LIMITED, the fast train of the Baltimore & Ohio between Washington and St. Louis, has this week completed its first two years of life; and the record shows that of the 1460 trips which it has made in that time, 1431 show arrival at destination on time; 715 westbound and 716 eastbound. This is 97 per cent of a perfect record.



Ice Model of C. P. R. Locomotive, Palais Station, Quebec, on Occasion of Winter Carnival

New Southwestern Rates Ordered

I. C. C. prescribes distance scales including both reductions and increases

WASHINGTON, D. C.

AN entire revision of the interstate class rates and many commodity rates in the Southwest, based on a comprehensive system of scales based largely on distance, is prescribed by the Interstate Commerce Commission in its decision made public on April 23 (decided April 5) in the cases combined under the title Consolidated Southwestern Cases.

The commission finds that such a system of distance rates is the only way "to correct the many unduly prejudicial and preferential situations and to bring order out of the present rate and tariff chaos" which it finds to exist. The plan is somewhat similar to that ordered for application to the class rate structure of the Southeast, although the rates average about 10 per cent higher, and it affects traffic from which the roads derive about 40 per cent of their freight revenues, not including the commodity rates on basic or raw materials which make up about 60 per cent of the freight revenues.

In an explanatory statement given to the press the commission refers to the new rates as including some increases and many material reductions, but nothing is said as to the probable effect on the carriers' revenues and the entire report deals with questions of rate and tariff construction rather than with questions as to the financial condition of the railroads.

The statement describes the decision as "one of the most important and voluminous issued by the commission in its 40 years." The report, by Commissioner E. I. Lewis, comprises 275 printed pages, and is complicated by the fact that it deals with so many different rate situations and commodities, while the findings require many references to the various scales set forth in appendices, but the commission, departing from its usual practice, has given a concise explanation of its scope and purpose in its press notice as follows:

Commission Issues Press Notice

"In a report made public today the Interstate Commerce Commission found in favor of the complaints of the Corporation Commission of Oklahoma, certain northeastern Texas cities, and others of unreasonable and of unduly prejudicial and preferential rates in the Southwest. It ordered an entire revision of the interstate class rates and many commodity rates in the Southwest. The decision includes not only Oklahoma and Texas but Arkansas and Louisiana west of the Mississippi river and parts of Kansas and Missouri. It includes revision of rates from and to grouped points in the states beyond the Missouri and Mississippi rivers and east of the Rocky Mountain states. The latter rates are to be constructed by addition of specific amounts or arbitraries up to or beyond Kansas City, St. Louis, Memphis, Vicksburg, or New Orleans, as the cases may be. Ocean and rail group rates from and to north Atlantic ports and interior points via south Atlantic and Gulf of Mexico ports are prescribed. Practically all commodities, principally manufactured articles, are affected, but including no basic commodities or raw materials, such as grain, sand, lumber, or the like.

"The report emanates from Commissioner Lewis and is unanimous. While principally it covers the interstate rates, intrastate rates are found to be unduly preferential and to discriminate unjustly against interstate commerce where and to the extent that they are relatively lower than the approved interstate rates. The necessary readjustment of the intrasate rates is left, in the first instance, to the state commissions and to the railroads, in accordance with the customary practice. The effective date of the order covering the interstate rates is December 5, upon 60 days' notice.

One of Most Important Decisions in 40 Years

"The decision is one of the most important and voluminous issued by the commission in its 40 years, and is the result of a series of hearings and nearly two years' study and analysis of evidence. It reveals the chaotic condition of the present rate structure in the Southwest, and that the tariffs are complicated, ambiguous and unsatisfactory. Many existing rates for given distances are found to be two or three times as high in one part of the territory as in other parts, notwithstanding that transportation conditions are found to be substantially similar throughout the Southwest and western and southern Kansas and southern Missouri. The commission holds that in order to enable each city or town to obtain the share of trade to which its advantage of location entitles it, a general readjustment of all of the rates is necessary on a comprehensive plan which will enable tariffs to be simplified and will afford the shippers like rates for like services. The decision probably goes further in the direction of abolishing rate inequalities and bringing about simplified tariffs than any one previous decision.

In meeting the charges of undue prejudice and preference the commission has abolished the extensive so-called Texas common-point territory, although limited groupings are authorized. In meeting these charges the commission has also placed contiguous parts of Kansas and Missouri on a parity with Oklahoma and Arkansas.

The decision made public today originated in several complaints of unreasonable rates and of discrimination and preference as between competitors, principal among which were the complaints filed by the Oklahoma Commission and the associated northeastern Texas cities, including Dallas, Forth Worth and Paris.

For the four southwestern states a distance scale of first class interstate rates is precribed, applicable to both single and joint line hauls. It has a different progression, but will average on the whole about ten per cent higher than the class scale recently prescribed by the commission for the Southeast. The same scale is approved for Kansas and southern Missouri, except those portions within approximately 150 miles of the Missouri river cities, for which a scale about seven per cent lower is approved.

Ten Class and Nine Commodity Scales

A new rate structure is provided. It consists of ten class and nine commodity scales. The construction is such that additional scales may be inserted as found desirable or necessary. Maximum reasonable rates on about 35 particular commodities are prescribed by assignment of the commodities to certain of the class scales or certain of the nine commodity scales.

Distance scale arbitraries are provided for addition to

the rates in the so-called Texas differential territory and on the Rock Island line between Texhoma and Tyrone in Oklahoma, as well as for those lines which are financially weak.

The scales are to be applied to short-line distances, except that points of origin and destination may be grouped where the hauls exceed 150 miles, the group rates to represent fair averages of the point-to-point scale rates and the groups of points to be graded in size as distances increase. With one notable exception, the commission's conclusions differ principally in form and detail from those in the report heretofore proposed by Examiner Disque. The exception is that specific through rates between the Southwest and the so-called defined territories beyond the rivers are prescribed for application over the rail routes and the ocean and rail routes.

Among the commodities on which specific carload rates are prescribed are agricultural implements, bagging and ties, bags and bagging, coffee, canned goods, fertilizer, iron and steel articles, sugar, soap, starch, live and dressed poultry, butter and eggs, wooden barrels and kegs, cotton fabrics, fruits and vegetables, furniture, glass bottles, roofing materials, syrup and molasses and vinegar.

The readjustment prescribed to, from and between points in the Southwest involves both reductions and increases. The removal of the undue prejudice to Oklahoma and the undue preference of Kansas and southern Missouri will involve some increases in rates between points in those States and between those States and other portions of the country. On the other hand, many of the rates found reasonable to and from Kansas and southern Missouri, particularly on traffic from or to the great manufacturing area in the central and middle Atlantic states, are lower than the present rates, sometimes materially.

Summary of Findings

The commission's findings are summarized in the headnotes to the report as follows:

1. Transportation conditions throughout the Southwest found to be substantially similar and not greatly less favorable than in Kansas, Nebraska or southern Missouri.

2. Class and commodity rates applying to, from, or between points in the Southwest and Kansas-Missouri territory found to be in generally chaotic condition, and the tariffs there applying complicated and unsatisfactory. Comprehensive system of rates based on distance, and embodying uniform class percentages so adjusted as to permit greater carload movement on class rates, needed to correct the situation.

3. As to all-rail traffic from Oklahoma, Arkansas, western Louisiana, Kansas-Missouri territory, Missouri River cities, Mississippi river gateways, and defined territories to Texas, and from Texas to Oklahoma, Arkansas, and western Louisiana, the Texas common-point rates on articles embraced in No. 14880 (Dallas Chamber of Commerce complaint) found to result in undue prejudice to the complaining northeast Texas cities and in undue preference of other Texas points to the south and west, including the Houston-Galveston group, as indicated.

4. All-rail class and commodity rates on articles embraced in No. 14880 from Mississippi river gateways, Missouri river cities, Kansas-Missouri territory, and defined territories to Texas, Oklahoma, Arkansas, and western Louisiana found to result in undue prejudice to the complaining northeast Texas cities and in undue preference of points in Oklahoma, Arkansas, and western Louisiana as indicated.

5. Class and commodity rates on articles embraced in No. 13535 (Corporation Commission of Oklahoma complaint) between Mississippi river gateways, Missouri river cities, and defined territories, on one hand, and points in Oklahoma and in Texas, Arkansas, Kansas, designated portion of Missouri and western Louisiana, on the other, found to result in undue prejudice to Oklahoma and in undue preference of the other named States or parts of States as indicated.

6. Class and commodity rates on articles embraced in No. 13535 between Oklahoma and designated portions of Kansas and Missouri, in their relations to relatively lower intrastate rates within those portions of Kansas and Missouri, found to result in undue prejudice and preference and in unjust discrimination against interstate commerce as indicated.

7. Class and commodity rates on articles embraced in No. 13535 between Oklahoma and Texas, and on articles embraced in No. 14416 (Little Rock Board of Commerce Complaint) from Little Rock, Ark., to Texas, in their relations to relatively lower rates between Shreveport, La., and Texas, and from Shreveport to Texas, respectively, found to result in undue prejudice and preference as indicated.

8. Class and commodity rates on articles embraced in No. 14880 between Oklahoma and the complaining northeast Texas cities, in their relations to relatively lower intrastate rates in Oklahoma, and on articles embraced in No. 13535 between Oklahoma and points in Texas common-point territory, in their relations to relatively lower intrastate rates within the latter territory, found to result in undue prejudice and preference and in unjust discrimination against interstate commerce as indicated.

9. Class and commodity rates on articles embraced in No. 13535 between Oklahoma and points in Texas differential territory, in their relations to relatively lower intrastate rates within the differential territory and between that territory and Texas common-point territory, found to result in undue prejudice and preference and in unjust discrimination against interstate commerce as indicated.

10. As a whole, intrastate class and commodity rates in Texas, in their relations to corresponding rates between St. Louis, Mo., and Texas, are not shown to result in undue prejudice or preference, but in some instances, such as rates between Houston-Galveston-Beaumont and northern and northeastern Texas, the intrastate rates result in undue preference, to the undue prejudice of shippers and receivers in St. Louis territory.

11. Class and commodity rates on articles embraced in No. 13535 (*a*) between Oklahoma and Arkansas, in their relations to relatively lower rates between Arkansas, on one hand, and St. Louis, Mo., Memphis, Tenn., and New Orleans, La., on the other; (*b*) between Oklahoma and western Louisiana in their relations to relatively lower rates between western Louisiana, on one hand, and St. Louis and Kansas City, Mo., and Memphis, on the other; and (*c*) between Oklahoma and Texas, in their relations to relatively lower rates between Texas, on one hand, and St. Louis and Memphis, on the other; found to result in undue prejudice and preference as indicated.

12. Class and commodity rates on articles embraced in No. 14880 (*a*) between the complaining northeast Texas cities and points in western Louisiana other than New Orleans and Shreveport, in their relations to relatively lower rates between western Louisiana, on one hand, and Memphis, Tenn., and St. Louis and Kansas City, Mo., on the other, and (*b*) between the complaining cities and Arkansas in their relations to relatively lower rates between Arkansas, on one hand, and Memphis, Kansas City, St. Louis, and New Orleans, on the other, found to result in undue prejudice and preference as indicated.

13. Class and commodity rates on articles embraced in No. 13535 between Arkansas and Oklahoma, and on articles embraced in No. 14880 between Arkansas and the complaining northeast Texas cities, in their relations to relatively lower intrastate rates within Arkansas, found to result in undue prejudice and preference and in unjust discrimination against interstate commerce as indicated.

14. Class and commodity rates on articles embraced in No. 13535 between Oklahoma and western Louisiana, and on articles embraced in No. 14880 between western Louisiana and the complaining northeast Texas cities, in their relations to relatively lower intrastate rates in western Louisiana, found to result in undue prejudice and preference and in unjust discrimination against interstate commerce as indicated.

15. Ocean-rail rates between north Atlantic ports and interior trunk-line and eastern defined territory points, on one hand, and points in Kansas and in the Southwest, including Texas differential territory, on the other, via south Atlantic and Gulf ports, found unreasonable and unduly prejudicial and preferential as indicated. Maximum reasonable and non-prejudicial rates prescribed. Findings in *Rates to Southwestern Destinations*, 95 I. C. C. 188, that ocean-rail rates via Gulf ports should not exceed 80 per cent of combinations on those ports and should include marine insurance, overruled.

16. Tariffs naming one-factor through rates between interior trunk-line and eastern defined territory points and the Southwest and Kansas-Missouri territory without concurrence of the rail lines to the north Atlantic ports, found unlawful.

17. All-rail class and commodity rates on articles embraced in these proceedings should be on same level throughout the Southwest and designated portion of Kansas-Missouri territory; and on standard rail lines a single scale of first-class distance rates should be used as basis for maximum reasonable interstate rates within those areas.

18. Class rates and commodity rates on various individual

articles for interstate application from, to, and between points in the Southwest and Texas differential territory, and between points in those territories and points in other States east of the Rocky Mountains, found unreasonable to the extent that they exceed reasonable maximum rates prescribed.

19. Distance or group arbitraries prescribed for application between, from, and to points on Fort Smith & Western Railway, the arbitraries to accrue wholly to that carrier. Procedure for other short or weak lines seeking authority to establish rates higher than standard scale prescribed.

20. Distances computed over the shortest routes over which carload traffic can be moved without transfer of lading required to be used in computing rates under the distance scales prescribed or approved.

21. Reasonable maximum bridge arbitraries or crossing allowances for Mississippi River crossings authorized.

22. Defendants authorized to cancel existing less-than-carload classification exceptions and commodity rates applicable to and from the Southwest and to substitute prescribed class rates, subject to western classification ratings.

23. Manner of removing the undue prejudice and preference as between persons or localities and the unjust discrimination against interstate commerce found to exist, prescribed.

24. Applications for fourth-section relief assigned for hearing in these proceedings denied to extent they are involved, but upon seasonable application by defendants consideration will be given to entry of orders granting relief from long-and-short-haul provision of fourth section as indicated.

25. Complaints in Nos. 15217 (West Texas Chamber of Commerce), 15231 (Iowa Railroad Commissioners) and 17542 (Rome Wire Co. complaint) dismissed.

26. Prior report in Investigation and Suspension Dockets Nos. 2097 and 2271, 95 I. C. C. 188; in Investigation and Suspension Docket No. 1769 and in Nos. 14592 and 14695, 96 I. C. C. 19; and in No. 17417, 96 I. C. C. 303.

The report is divided into the following main parts or chapters, some of which are further subdivided as to commodities and rate groups or situations: The Commercial Situation, Transportation Conditions, Description of the Rate Structure, All-Rail Class Rates, Commodities, and General Discussion and Conclusions. Extracts from some of the more general parts of the report, including the discussion of the need for a comprehensive distance system of rate-making, are as follows:

The Commercial Situation

The traffic covered by these cases consists principally of manufactured goods, largely of the higher grades It includes groceries, hardware, furniture, iron and steel articles, and hundreds of other commodities in more or less general use. These articles move from points of manufacture to points within and without the southwestern territory, principally in carloads. The interior Southwest is not primarily a manufacturing territory, but is developing along that line.

In so far as goods consumed in that territory and in Kansas-Missouri territory are concerned, while there is some direct movement from points of manufacture to points of consumption, the principal movement is in carloads on commodity rates to jobbing points, from which the goods are distributed in less-than-carload quantities on class rates to retailers or consumers. Owing to the small development of manufacturing in the Southwest most of the commodities originate at points in other territories, principally the western, eastern and southeastern defined territories and trunk-line territory. Jobbers doing business in Kansas-Missouri territory and the Southwest are located at numerous points throughout those territories and at the Missouri river cities and the gateway points, and to some extent at cities beyond, such as Chicago, Ill., Des Moines, Iowa, the Twin Cities, Minn., and Cincinnati, Ohio. At practically every town and city in Kansas-Missouri territory and in the Southwest with a population of a few thousand or more are located jobbing houses.

Each jobber is in direct competition with jobbers in contiguous towns. These surrounding jobbers in turn compete with others in towns beyond them, and the latter in turn with still others. The smaller jobbers also compete with the larger jobbers shipping from the larger cities within and without the territory. Therefore, while naturally not every jobber or jobbing town competes directly with every other, there is general competition in the distribution of commodities throughout the territory. The relationships of the inbound and outbound rates entering into the competitive distribution in surrounding districts and in the territory as a whole are of commercial importance.

To some extent there is competition between jobbers and manufacturers. Among the various communities there is a natural competition for population and for commercial and industrial development. In seeking a location for a jobbing house or factory one of the first things considered is the freight-rate situation. There is keen rivalry between towns in the Southwest for the location of new industries to meet the increased needs of the growing population.

There is thus an endless chain of actual and potential competition in the distribution of goods on class rates, not only within the territory but from and to the border cities and cities beyond. Towns paying for like services higher rates than others, or paying rates higher, distance considered, than others, are placed at a disadvantage and often are deprived of their natural advantages of location. Until there is brought about a fairly uniform adjustment which will afford substantially equal rates for equal services and rates properly proportioned as between long hauls and short hauls, complaints of discrimination and prejudice will continue to arise. Moreover, aside from the strictly commercial phases of the situation, in so far as practicable, all rates, intrastate and interstate, should contribute in fair proportion to the revenues of the carriers. Therefore, in a general territory where traffic and operating conditions are substantially similar the rates for given distances should be substantially the same.

It is the common practice of jobbers and manufacturers to make allowances in prices, and thus reduce their profits, where necessary, to meet the prices of competitors enjoying freight rates on lower bases. A shipper's enforced absorption of an unjustified difference in freight rates in the sale of his products results in undue prejudice to him. The undue prejudice is more pronounced when a rate maladjustment precludes him from doing business in which he might engage if rates were equitably related.

The record discloses mutual competition under inequitable rate conditions between points in Oklahoma, Arkansas, western Louisiana, Texas, Kansas, and southern Missouri. As between cities in each State there are areas in which the efforts to obtain business overlap, or in which, under rates appropriately related to the respective transportation services, the activities of rival manufacturers and jobbers would overlap. Where there is no movement of particular commodities or no active competition between commercial interests it is often because the freight-rate situation prevents it. In other words, the opportunity to do business is sometimes foreclosed by freight rates. That communities as well as individuals or industries may be adversely affected by rate maladjustments is illustrated by testimony that Dallas lost, for that reason, an industry which there was reason to believe would otherwise have been located at that point, and that one structural-steel concern, originally located at Dallas, removed to Houston because of the latter's more favorable inbound rates on the raw material, obtained principally from Pittsburgh, Pa.

Class Rate Structure

Owing to the high-class percentage obtaining in the southwestern and Kansas-Missouri territories in connection with the carload classes, comparatively little carload traffic moves on class rates except in those instances where articles have been given by classification exceptions ratings lower than those in the classification itself. A similar situation appears to exist in southern territory, but in official territory and in the area north of Kansas-Missouri territory and west of the Indiana-Illinois line to and including the Colorado common points a much greater percentage of carload traffic moves on class rates.

In following portions of the report the rates on a number of important commodities to and from points in the southwestern and Kansas-Missouri territories are discussed and the percentage relationships which those commodities bear to the first-class rates between the same points are shown. The percentages of first class represented by the carload commodity rates will be found in most instances to average lower than the percentages represented by the carload classes prescribed in the *Fargo case*, or than exist in many of the class rates which have applied in western trunk-line territory for many years. Of the 15 commodity scales prescribed in the commodity decision in *Memphis-Southwestern Investigation*, seven apply on articles rated fifth class, including bagging and ties, beverages, canned goods, fruits and vegetables, glassware, iron and steel articles, molasses, roofing, soap, starch, sugar and vinegar. The percentage relations which these respective scales, applicable to fifth-class articles, bear to first class range from a minimum of 21 per cent to a maximum of 39 per cent. The only class A articles upon which commodity rates were there prescribed were agricultural implements, rates on which were made approximately 39 per cent of first class.

We have repeatedly held that, speaking generally, the same

class percentages should apply throughout any one classification territory, and that, as rapidly as may be possible, progress should be made to harmonize the classification ratings and class percentages throughout the country. At present, uniform class percentages apply throughout central and New England territories, and those in the remainder of official territory are not widely divergent. In *Southern Class Rate Investigation, supra,* uniform class percentages have been prescribed for use throughout the entire southern territory. We have here for consideration the reasonableness of class rates to and from the Southwest. The relationship of the class rates in that territory to those in Kansas-Missouri territory, and to those to and from Missouri river cities and other points, is also involved under allegations that the southwestern rates unduly prejudice that territory, to the undue preference of the other territories and points. So far as considerations which govern class percentages are concerned the record discloses no differences in conditions as between the Southwest and western trunk-line territory, and, following the principles heretofore announced, we are of opinion that substantially the same class percentages should apply in both territories.

We are persuaded that the interests neither of the public nor of the carriers are served by maintaining carload class rates on such high bases that they are rarely used, making it necessary to follow the practice which has prevailed for many years in the Southwest of establishing commodity rates on practically all commodities which move in carloads in material volume. It is due to this practice that many of the discrepancies in rates which are the subjects of complaint have arisen. Existing widespread dissatisfaction with the complexity of tariffs in the Southwest is discussed in a later section of this report. Much of this complexity arises out of the prevalence of commodity rates and the failure to adjust them on a basis which would fairly relate the various points which compete with one another. In the circumstances, we are of opinion that we should follow the principle that carload class rates should be prescribed which are capable of moving many of the carload commodities, as is the case today in official and western trunk-line territories, thus making it possible to eliminate from the tariffs thousands of commodity rates.

Commodities

Between the southwestern gateways and Missouri river cities, on the one hand, and points in Kansas-Missouri territory and the Southwest, on the other, specific commodity rates are quite generally in effect via all-rail and ocean-rail routes on most articles in carloads which move in material volume. Comparatively few commodity rates apply on commodities in less-than-carload quantities to, from, or between points in the Southwest. Among the few articles on which such rates are generally applicable are cotton piece goods. To and from Kansas-Missouri territory a number of less-than-carload commodity rates on canned goods, beans, coffee, syrup, sugar, and a few other commodities apply. Texas is the only southwestern State in which many less-than-carload commodity rates still persist. Among the articles on which such rates lower than the class basis apply in that State are fertilizers, hides, leather, stock and poultry foods, unshelled peanuts, chocolate raw materials, eggs, iron and steel articles, junk, stoneware, earthenware and pottery, sulphur, ice, candy, cedar chests, and cotton-picking bags.

The carload commodity rates, speaking generally, differ widely as to levels in different parts of the Southwest, and should uniform commodity distance scales, or group rates based on uniform scales, be established throughout that territory on almost any basis, radical increases and reductions would of necessity result. While the rate and competitive situation on most commodities is in a general way similar to that on class rates, individual discussion of a number of important commodities dealt with of record follows.

In respect of the various commodities embraced in these proceedings the chaotic condition of the rates has resulted in many situations in which certain communities or sections enjoy rates relatively lower, and others are handicapped by rates relatively higher, than are warranted by comparable circumstances and conditions. Many of these advantages and disadvantages are undue. The commodities here dealt with are produced and distributed over a wide area. It has been pointed out that, except where marked differences in traffic density, population per square mile and per mile of railroad, and so forth, point to the propriety of different rate levels, the territory here considered is so homogeneous, both in respect of transportation and of marketing conditions, that a uniform scheme of rate making, based largely upon distance and according to each community, the advantage or disadvantage of its location, affords the only real remedy for the existing unlawful rate inequalities.

Southwestern Tariffs Complicated and Unsatisfactory—Nonconcurrence Tariffs

The complexity of the tariffs in which many of the southwestern and Kansas-Missouri rates are published has added materially to the confusion and dissatisfaction with respect to the rate adjustment. Quite frequently during recent years, when carriers have undertaken to change rates, instead of following the spirit of our tariff rules and revising the rates already in effect, they have adopted the short-cut method of merely adding the new rates in a further section of the tariff, to apply alternatively with the rates already in effect. Every such addition adds to the difficulty of determining the applicable rate on a given shipment. Often, different rates on a given commodity between given points are found in as many as four or five sections, applying alternatively with one another. Class rates alternate with commodity rates, and commodity rates with other commodity rates. Frequently the commodity descriptions in the various sections vary materially. For example, on canned goods from defined territories to Oklahoma there are six separate commodity descriptions, each with different rates. Some of the rates are grouped and others are on distance bases. Notwithstanding that the carriers serving Kansas-Missouri territory are in many instances the same as those serving the Southwest, and notwithstanding that many of the principal lines from the gateways and Missouri river cities to the Southwest pass directly through Kansas-Missouri territory, there appears to have been little or no co-ordination between the traffic officials in charge of Kansas-Missouri territory and those in charge of the Southwest. Commodity descriptions for the former territory are often determined independently of the latter, making it technically necessary to publish rates determined upon to southwestern points, with the commodity descriptions used for that territory, as maxima to intermediate points in Kansas-Missouri territory in order to avoid technical fourth-section departures, notwithstanding that the rates ordinarily used to the Kansas-Missouri territory are materially lower than those to the territory beyond and that the alternative rates so published are not often used. Similar difficulties exist within the Southwest itself, rates to Texas often being made without regard to Oklahoma or Arkansas, or vice versa.

Exceptions to the rates and routing are numerous, many of which arise largely out of the lack of any underlying plan or basis for the existing rates. It is clear that, while material improvement could undoubtedly be made in the tariffs without a general revision of the rates, nevertheless so long as the chaotic rate situation remains and until some comprehensive basis for constructing the rates throughout the Southwest is made effective, having due regard for the rates to and from surrounding territory, particularly to the north and east, just so long will the tariff situation be complicated and unsatisfactory.

While the ocean carriers and the rail carriers west of the south Atlantic ports and north of the Gulf ports concur in the through one-factor rates between eastern defined and trunk-line territories and points in the Southwest and in Kansas-Missouri territory, the rail lines to the north Atlantic ports concur in comparatively few. This plan of publishing the through rates without the concurrence of the rail lines in trunk-line territory has been in effect for a number of years, not only to and from the territory in these cases, but also to and from southern territory. Similar tariffs were considered in *Southern Class Rate Investigation,* 100 I. C. C. 513. We there found that the nonconcurrence plan of publishing ocean-rail rates should be discontinued and joint through rates substituted therefor. We have repeatedly disapproved similar through rates applied to all-rail routes.

We find that nonconcurrence tariffs are unlawful and that such tariffs containing rates from, to, or between points embraced in these proceedings should be cancelled at the time the rates are made effective pursuant to the findings herein; and that the reasonable and nonprejudicial ocean-rail rates between points in trunk-line territory or in eastern defined territory, on the one hand, and the Gulf ports and interior points in the Southwest and Kansas-Missouri territory over Gulf and South Atlantic port routes, on the other, should be published as joint through rates in accordance with the provisions of section 6 of the interstate commerce act and of our tariff rules promulgated pursuant to that act.

Comprehensive System of Rates Based on Distance Needed

The previous discussion indicates that within the Southwest, and applicable to traffic to and from that territory, almost every kind of rate is to be found. Among them are distance scales, or rates made upon such scales, some of which have

single-line application only and others of which include both single and joint hauls. Some scales provide the same rates for hauls over two or more lines, and others have higher rates for hauls over three or more lines than for two. There are specific point-to-point rates which increase roughly with distance, rates from small groups to small groups, rates from individual points to small groups or vice versa, and rates between large and small groups. The Texas common-point area constitutes the largest single group in the country maintained in connection with hauls as short as some of those to and from that territory. Except on transcontinental traffic, indeed, there are few groups as large for any purpose. The various class rates embody no uniform relationships of the lower classes to first class. The commodity descriptions applying in connection with the commodity rates are numerous and varied. The levels of rates vary materially in different parts of the Southwest, some rates being two or three times as high as others on the same commodity for the same distance. The latter instances are by no means confined to present or prospective movements large in one case and small in another. In no other part of the country are complaints with respect to complicated tariffs so numerous.

Transportation conditions have been shown to be substantially similar in Arkansas, Oklahoma, western Louisiana, Texas common-point territory, central and western Kansas, and the extreme southern portion of Missouri. There are, of course, variations in the density of traffic, in the population per mile of railroad and per square mile, in the earnings per mile of road, and in other factors to which consideration should be given in determining rates. Some lines are main lines of heavy density, others are branch lines of less density, and still others are short-line roads, usually with comparatively little traffic. It would be, however, manifestly undesirable and impracticable, even were it in harmony with the act, to prescribe rates dependent upon the density of traffic on particular lines. Rather, the average conditions in each part of the country should prevail. As noted, those average conditions are sufficiently similar in the area above indicated to warrant the conclusion that the same level of rates should prevail throughout.

Having had a similar situation before us in our investigation of class rates in southern territory, *Southern Class Rate Investigation*, we determined to prescribe a single distance scale of rates to apply locally throughout that territory, dirsegarding small differences in transportation conditions in different portions thereof, having been of the opinion that in no other way could a reasonable rate structure be established that would be free from undue prejudice and preference as between communities and would afford to each community and territory a fair opportunity to do business in competition with others. In that proceeding we indicated that for the shorter hauls a distance scale should be strictly applied, but that for longer hauls reasonable groupings might be used, the rates to and from such groups to average substantially the same as if the rates to and from each point were constructed strictly on the scale. In central territory, the area where probably a greater tonnage moves than in any area of similar size in the country, the rates on most of the articles here in issue are based on a distance scale prescribed in *C. F. A. Class Scale Case, supra*. The class rates and most commodity rates between central and trunk-line territories are on a group basis, which corresponds roughly with distance.

We are convinced that, in order to correct the numerous prejudicial and preferential situations disclosed by the record and to bring order out of the rate and tariff chaos now existing, a comprehensive system of class and commodity rates based closely upon distance must be established.

Upon all the facts and circumstances, we find that all-rail class rates and all-rail commodity rates on the articles here under consideration should be on the same level throughout the Southwest and that part of Kansas-Missouri territory west and south of the line described in note 1 of finding No. 3,

Note 1—The line of the Frisco from Springfield, Mo., through Aurora and Monett to Neosho; thence via the Kansas City Southern to Joplin; thence via the Frisco through Galena, Kans., Columbus and Oswego to Severy; thence via Santa Fe to Eureka; thence an air line to Bazaar; thence via the Santa Fe through Strong City, Lost Springs, Hope, and Detroit to Abilene, and thence through Manchester and Concordia, Kans., to Superior, Nebr.

and should be based upon a distance scale sufficiently extended so that hauls of all lengths will be covered.

Southern territory adjoins the Southwest on the east. The two territories lie side by side for a distance of practically 500 miles. Having prescribed bases of rates to apply between points in southern territory, and between points in that territory and points in official territory, it is proper that, in so far as warranted by conditions in the Southwest, similar rate bases, on a level properly reflecting southwestern conditions, should be adopted. In numerous previous cases we have recognized that rates in the Southwest may properly be somewhat higher than in southern territory. In so far as this record affords a basis of comparison between the two territories, the continued application of that principle seems appropriate. In southern territory class rates for application over all trunk-line roads, including both main and branch lines, were based on the same scale, but weak and shorter lines were authorized to add arbitraries on local and joint traffic for their hauls. In this respect conditions in the Southwest appear to be similar to those in southern territory, and a similar plan should be followed with respect to class rates and to commodity rates on the articles involved in these proceedings.

We find that on standard lines a single scale of distance rates should be used as the underlying basis of maximum reasonable inter-state class rates and commodity rates on the articles embraced in these proceedings, between points within the Southwest and that part of Kansas-Missouri territory west and south of the line described in note 1 of finding No. 3; and that all the carriers operating within the Southwest and the portion of Kansas-Missouri territory described should be classed as standard lines, for the purpose of this finding, except for the short and weak lines for which special treatment is hereinafter found proper.

Joint-Line Versus Single-Line Rates—Computation of Distances

As previously noted, where joint rates have applied between points in the Southwest and in Kansas-Missouri territory they have either been constructed on group bases or have been based on distance scales which are generally higher than the single-line scales for like distances. The group rates are generally no higher for joint hauls than for single-line hauls for like distances. Since the hearings the carriers have informally impressed upon us the desirability of adopting a uniform system of computing distances and applying distance rates, if such rates are to be prescribed. Manifestly, where distance rates are prescribed for strict application throughout an area as large as the Southwest, material difficulties are encountered in computing and publishing specific rates. Adequate distance tables in many instances are not now available. While as a rule each carrier publishes a table showing the distances between stations on its own line, tables showing distances from points on one line to points on another are generally not now on file with us, except locally between points in some of the States. Even the latter are not compiled on the same basis in one State as in another. Consequently, apart from the ordinary difficulties attending an endeavor to compute distances between two States by combining those in two or more separate distance tables, the differences in the methods used to ascertain the distances in the respective tables make the latter unreliable for the purpose. In a number of previous cases, where distance rates were prescribed for application in the Southwest over the lines of two or more carriers, the number of lines which should be used in computing the distances were limited. Sometimes the use of not more than three carriers was provided; and sometimes four, and sometimes five lines were required to be usd, dependent upon the total distance involved. Either the use of joint-line arbitraries or limitations upon the number of lines to be used in computing distances means that the rate-making distance between any two points is not constant. Stated otherwise, there is one rate-making distance, between two points as to traffic moving locally between those points, but there may be any one of several other rate-making distances between the same two points as to traffic coming from or destined to points beyond. In the interest of simplicity and of limiting time and expense in computing rates, some system which will recognize but one distance between any two points on the same line or lines of railroad is desirable.

We are in accord with the carriers' view that a uniform method of computing distances for application of all the distance rates to be established in these cases should be prescribed. It remains to be determined what the basis should be. In the second supplemental report in *Southern Class Rate Investigation* we provided that in computing distances between points in southern territory the shortest routes over which carload traffic can be moved without transfer of lading should be used. We further provided that no joint-line arbitraries should be added, and that no distance additions should be made for shipments moving over the lines of more than one carrier. We are of the opinion that in the interest of uniformity, of tariff simplicity, and of more equitably related rates over multiple line routes for varying distances, we should follow substantially the same rule in computing distances in the Southwest. We recognize that in many instances this rule will result in some-

what shorter distances than have heretofore been required to be used for the computation of distance rates in the territory affected. Further, such a rule provides no higher rates for joint-line than for single-line application. Therefore, the basic scale should be made higher on these accounts than it otherwise would be.

Finding No. 15. We find that, in applying the distance rates and the distance arbitraries hereinafter provided for short or weak lines and for Texas and Oklahoma differential territories, the shortest routes over which carload traffic can be moved without transfer of lading should be used; and that no differentials, arbitraries, or distance additions for joint-line haul should be provided, but that the absence of such additions and the short-line method of computing distances prescribed should be given weight in determining the level of the basic distance scale or scales.

Construction of the Southwestern Scale

No generally accepted mathematical formula has been developed for the construction of a scale of distance rates. Most of the scales made by carriers or prescribed by us have been built to fit particular situations. The ordinary method, it appears, has been to select or fix certain objectives—i. e., rates for certain distances which are deemed reasonable or desirable—and then build the scale around these key rates. We are here dealing with a broader problem and a wider area and must endeavor to construct a scale which will not only be adequate to the situation throughout the Southwest but be reasonably in accord with the southern class scale which applies in the territory immediately east and with conditions in Kansas-Missouri territory and the western defined territories. There is a general progressive competitive situation extending from Chicago and the Twin Cities to the Gulf, and the maintenance of radically different scales or bases of rates in the different portions of this general territory must inevitably result in undue prejudice and preference. We are of opinion, therefore, that the scale here to be prescribed, while based primarily upon conditions in the Southwest, not only should in a general way follow the progression and construction of the southern scale, but should take into account conditions in Kansas-Missouri territory, and, in so far as we have information before us on the subject, in the remaining area north of Kansas and southern Missouri as well.

It is a generally recognized principle of rate making that the rate per ton per mile should decrease as distance increases. Freight rates combine two factors of cost—(1) terminal cost and (2) line-haul cost. The first remains constant, whatever the length of haul. It is a generally accepted theory that the latter is somewhat higher for the shorter hauls than for the longer. There is, however, in this record no evidence showing conclusively the relationships which from a cost standpoint the longer-haul rates should bear to the shorter-haul rates.

In the *Southern Class Rate case* we adopted rates of progression, based upon testimony dealing with terminal and line-haul costs, under which one rate of progression was used up to 75 miles, a second was used from 75 to 160 miles, a third from 160 to 400 miles, a fourth from 400 to 800 miles, and a fifth from 800 to 1,500 miles. The first rate of progression was comparatively high, on the theory that the service for 75 miles is usually in way trains, the most expensive freight trains operated by carriers. Each succeeding rate of progression was made somewhat lower than the next preceding, on the theory that line-haul costs decrease with distance, through-train service being considered less expensive per mile than local-train service. On this theory the greater the proportion of through-train service the lower the cost.

We have no reason to believe, and the record does not indicate, that relatively the differences in cost as between long and short hauls are materially different in the Southwest or in Kansas-Missouri territory from those in southern territory, and we see no reason for not following here substantially the same principles as were followed in the *Southern Class Rate case*. For convenience, the scale to be applied on first class will be used as the basic scale.

We find that the maximum reasonable first-class (column 100) scale to be used as a basis for the construction of interstate rates on standard lines between points in the Southwest and between points in that part of Kansas-Missouri territory west and south of the line described in note 1 of finding No. 3, is, and for the future will be, the distance scale of rates entitled "Southwestern Scale" set forth in Appendix 18 herein; and that maximum reasonable first-class (column 100) interstate rates on standard lines between points in the Southwest and between points in that part of Kansas-Missouri territory west and south of the line described in note 1 of finding No. 3 over routes lying wholly within the Southwest or passing in part through Tennessee, Mississippi or Louisiana east of the Mississippi River, are, and for the future will be, rates determined by the said distance "Southwestern Scale" applied in accordance with the provisions of finding No. 15 herein, except as otherwise provided in note 3, below.

Note 3.—In the event that it is desired to apply, for hauls in excess of 150 miles, group rates in lieu of point-to-point scale rates prescribed in the above finding or in findings making reference thereto, this may be done; the groups to be graded in size in a manner substantially similar to the grading of the groups provided in Appendix No. 11 for traffic to and from the gateways and defined territories; the group rates to represent in each case a fair average of point-to-point scale rates to and from the points in the group. In computing first-class (column 100) rates over routes which cross the Mississippi River at gateways south of St. Louis, river-crossing allowances may be added as follows: At Thebes and Memphis, 4 cents; at crossings south of Memphis, 6 cents.

Short and Weak Lines

Among the defendants operating in the southwestern and Kansas-Missouri territories are a number of short independent lines and a number of lines of some length which also are independent of the principal trunk lines and are in comparatively poor financial condition and have comparatively light density of traffic. Among the longer independent lines are the Fort Smith & Western, the Kansas City, Mexico & Orient, and the Missouri & North Arkansas.

With the exception of the Fort Smith & Western, very little specific evidence concerning short and weak lines has been presented, but it has been shown that the state commissions of Arkansas and Oklahoma permit several of such lines to add arbitraries to the standard rates applying in those states.

The record is so incomplete that it is not possible to name specifically all the short or weak lines entitled to special treatment. Most of such roads are situated wholly within the limits of a single state, and the state commissions are in position to investigate and determine their just needs. Rates to and from points on such lines, however, should not be made by combining the local rates to and from the junctions with other lines. Combination rates of this character put the territory local to the weak or short lines at an even greater disadvantage than that under which such points of necessity labor, and tend to hamper the development of such roads and of industries and towns located thereon. Combination rates run counter to the theory that the financial necessities of weak lines should be met by liberal divisions of joint rates, because when rates are so constructed the trunk lines earn more for their hauls to and from junctions with short weak lines than they would earn to and from the same junctions on traffic to and from other trunk lines.

In view of the incomplete character of the record and the need of close investigation of particular cases other than that of the Fort Smith & Western, we will prescribe arbitraries to be used by the latter line, but will not attempt to say what other lines should be accorded special treatment or the precise nature of that treatment.

Lines other than the Fort Smith & Western believing themselves to be entitled to rates higher than those prescribed for standard lines should first apply to the commission or commissions of the state or states in which their lines are situated; and that, after a reasonable time has elapsed for such commission or commissions to act upon such application or applications, appropriate application should be made to us, accompanied by a statement of the action taken by the state commission or commissions: *Provided*, That where the rates to, from, or between points on the Fort Smith & Western or other short or weak lines for distances in excess of 150 miles are made on group bases as elsewhere herein prescribed or approved, the distance arbitraries for such short or weak lines may also be applied on group bases, such group arbitraries to represent fair averages of the point-to-point arbitraries which would apply were the rates constructed on point-to-point distance scale bases.

Classification and Exceptions Thereto—Class Percentages—Simplification of Tariffs

For years we have endeavored to promote uniformity in classification. Except for unification of rules and commodity descriptions, the progress in that direction has not been encouraging. Until greater uniformity in the percentage relations which the lower classes bear to first class is brought about, uniformity in ratings as between the respective classifications means little. Indeed, to rate a given article the same in all three classifications often results in less actual uniformity than if different classes were used. For example, the class C rates under the Memphis-Southwestern scale are 35 per cent of first class, whereas in western trunk-line and official territories the fifth-class rates are

approximately that percentage of first class. So long as vital differences in classification exist it is impossible to bring about uniform class percentages throughout the country, but, on the other hand, until the class percentages are made more nearly uniform, progress toward uniform classification is impeded. We believe that in every such general proceeding as the present such progress toward uniformity in this direction should be made as is possible.

Uniform class percentages throughout the Southwest should be prescribed, and the same percentages should be used to, from, and between points in Kansas-Missouri territory. The problem before us is to determine percentages which will, as nearly as possible, reflect the transportation characteristics of the articles in the respective classes, will provide bases harmonizing, as nearly as possible, with the remainder of western classification territory, and at the same time will approach uniformity with the percentages prescribed in southern territory in so far as conditions will permit. As previously noted, points in the Southwest and in Kansas-Missouri territory compete with the Missouri River cities, the gateways, and points in the western defined territories, particularly the area on and east of the Missouri river. So far as practicable, the class percentages throughout that part of western classification territory lying east of the Rocky Mountain States should be uniform. The remainder of that territory is not within the scope of these cases. As hereinbefore noted, the percentage relations which the classes below fourth have borne to first class in the Southwest have in almost all cases been so high that little or no traffic has moved on class rates, except where articles have been given, by exception, ratings lower than those provided in the classification proper. Consequently, the rates on the lower six classes in the Southwest have been of little practical use to the carriers or to the public, and the result has been the general application of commodity rates. While a scale of 10 classes, with most carload traffic carried in but six, would not in our opinion constitute a sufficiently flexible basis to provide for all the commodities here under consideration, we believe that much greater use should be made of the carload classes than has heretofore been the practice in the Southwest, and that the class percentages to be adopted should be devised with that desideratum in mind.

As before recognized, for the movement of some commodities rates different from the class rates are necessary in order to provide a reasonably flexible rate structure and give proper consideration to the varying transportation characteristics of such commodities. A very material contribution to such flexibility can be made by additional scales which will bear uniform percentage relationships to first class, thus in effect increasing the number of classes. Such a rate structure can be published in much less space and much more simply than can multiplied commodity rates, made to serve the desires of particular carriers to favor points on their own lines, too often to the disadvantage of points on other railroads. The addition of nine classes should not require much more space for publication of the rate tables than would the 10-class scale. By this method a rate structure may be devised which may properly supersede practically all of the thousands of pages of commodity rates now in force on the articles here under consideration, substituting a few pages of rate tables, supplemented by indices, commodity descriptions, and provisions for routing and application of the rates. For the rates themselves such a plan will require probably less than one-fiftieth of the space now used for the present multitude of rates in southwestern territory.

The above discussion has had to do primarily with rates between points in the Southwest. The class rates now applying between that territory and other territories here under consideration, so far as single-factor through rates are in effect, are subject to the western classification. We believe that all the class rates prescribed in this proceeding should be made subject to the western classification. Further, as was done in the *Southern Class Rate case*, there is no reason why the classes should not descend from highest to lowest without the break which now occurs between classes 5, A, and B, under which class A, although following class 5, is higher than the latter. For convenience, both the class and commodity scales hereinafter prescribed will be assigned column numbers corresponding to the percentages of the first-class (column 100) rates represented by such scales.

Nineteen Base-Rate Scales Prescribed

Finding No. 24.—We are of the opinion and find that 19 rate-base scales should be provided, the rates in the scales following the first-class (column 100) scale to bear to that scale the percentage relationships respectively provided in Appendix 13; and that such rate-base scales should be entitled, respectively, columns 100, 85, 70, 65, 60, 55, 50, 45, 41, 38, 35, 32.5, 30, 27.5, 25, 22.5, 20, 17.5, and 16.

It is not possible in this report to review each and every commodity separately, or to prescribe rates for each. It is, however, desirable that the rates on practically all the commodities embraced in these proceedings be revised in harmony with the specific class and commodity rates herein prescribed. Stated otherwise, the rates on most of the commodities for which no specific rates are herein provided, exclusive of commodities recognized as basic in character, such as products of mines and the like, should be placed on the revised class rates prescribed, should be made subject to the commodity basis applicable to the most nearly analogous article, or an additional basis should be provided therefor and be determined in the same manner as the bases provided in finding No. 24.

Finding No. 25.—We are of the opinion and find that maximum reasonable class and commodity rates, all-rail and ocean-rail, on the articles embraced in these proceedings from and to the points covered thereby are rates ascertained by first determining the maximum reasonable first-class (column 100) rate in accordance with other findings herein made and then applying on such classes and commodities the rates in the appropriate column opposite the first-class (column 100) rate as shown in the table in Appendix 13, subject to the provisions of Appendix 16; that as to commodities for which specific provision is not made in Appendix 16 the existing rates should be revised by making such commodities subject either to the class rates herein found reasonable or to the commodity rates in the column in Appendix 13 applicable to articles most nearly analogous to such commodities, or to commodity rates differing in amounts from any of the commodity bases prescribed in Appendix 13, but constructed in the same manner as those provided in finding No. 24; but that nothing here said should be taken as authority to increase up to the class basis existing commodity rates on articles not specifically treated in Appendix 16, the question of whether such articles should be subject to the class rates, or to one of the commodity bases provided in Appendix 16, or to an additional basis as above provided, to be determined by consideration of the facts and circumstances surrounding the transportation of such articles.

Miscellaneous

We have found that, in order to correct the many unduly prejudicial and preferential situations and to bring order out of the present rate and tariff chaos, a comprehensive system of class and commodity rates based largely on distance must be established. With that end in view we have prescribed maximum reasonable rates or bases of rates, from, to, or between the points or the territories here concerned. But inasmuch as these rates ar bases of rates are prescribed as reasonable maxima it follows that defendants are free to establish lower rates, subject to the limitations herein expressed or implied. For that purpose we have provided that they may publish such additional rate-base scales as may be necessary or convenient. If rates are applied to some points lower than to other where the circumstances and conditions of transportation are similar undue prejudice and preference will result. We can not in the compass of this report treat each individual situation. To the same extent that the desire of the defendants in the past to secure traffic from one another has been largely responsible for the present unsatisfactory conditions, they will now have it in their power, through uniform adherence to the bases herein prescribed, to perpetuate an adjustment which will be free from undue prejudice and reference and from unjust discrimination against interstate commerce.

We are of opinion and find that the undue prejudice and preference and the unjust discrimination against interstate commerce set forth in findings Nos. 1 to 11, inclusive, or any of them, can and should be removed by the establishment and maintenance, from and to the points, or within the areas, designated in said findings, of interstate and intrastate rates which on the classes or on individual commodities shall bear the same percentage relations to one another as those reflected in the respective maximum reasonable rates prescribed or approved in findings No. 11 and Nos. 16 to 26, inclusive, which rates, from and to the points, or within the areas, found to be unduly prejudiced shall be subject to commodity descriptions not less favorable, and to carload minimum weights not higher, than those maintained from and to the points, or within the areas, found to be unduly preferred: *Provided*, That nothing in this finding contained shall prevent the application of lower rates on particular commodities from and to particular points, with our approval, upon application and showing of special circumstances and conditions.

For example, on a commodity for which the column 38 rates are approved, should the defendants elect to maintain lower rates from or to points found to be unduly preferred, rates as much lower in percentage than the column 38 rates must be established and maintained from or to the points found to be unduly prejudiced.

In order to avoid undue prejudice and preference as between points not covered by the sections 3 and 13 issues in the proceedings, if rates lower than the reasonable maxima prescribed

or approved are applied from or to one or more points, rates proportionately lower in percentages should be applied from and to all other points embraced in the findings. This statement does not apply to one carrier or route meeting the rate of another carrier or route, but to the establishment of rates between any two points lower than the lowest maximum rates prescribed or approved via any route of the same class.

It appears from the record that many articles are produced or manufactured in the Southwest and Kansas-Missouri territory for which important markets are found in the eastern defined and trunk-line territories. In many instances the same or competing commodities are produced within those territories or at other points closer to the large centers of population in the East than are points in the area here principally concerned. Speaking generally, it does not appear than any undue prejudice would result from the maintenance of rates lower than those herein prescribed or approved as reasonable maxima from producing or manufacturing points in the Southwest and Kansas-Missouri territory to points in official classification territory without the maintenance of rates between points in the Southwest and Kansas-Missouri territory of rates proportionately lower than the maxima prescribed or approved. In many instances relatively lower rates now apply on such products moving to the area east of the Mississippi and north of the Ohio and Potomac Rivers. Consequently, nothing in this report is to be understood as disapproving the continuance of relatively lower interstate rates of the character indicated, provided that they conform to the provisions of the fourth section and are properly adjusted so as not to subject the producers of any locality or section to any undue prejudice or disadvantage with relation to producers in other localities or sections, or to give any undue preference or advantage to one point of destination over another, and provided that such rates are not lower than are necessary to meet competition actually existing in the consuming area.

As between points within the Southwest, Texas differential territory, and that portion of Kansas-Missouri territory lying on and west of the line described in note 2 of finding No. 3,* the maximum reasonable rates herein prescribed or approved (or rates which from and to all such points are proportionately lower in percentages) constitute nonprejudicial rates. But it is recognized that in many instances such rates will not remove existing undue differences as between the rates from or to points in the above areas, on the one hand, and rates from or to points contiguous thereto, such as St. Joseph, Kansas City, St. Louis, Memphis, Vicksburg, Natchez, and New Orleans, on the other. In other instances existing undue differences as between points within and without the area will be widened, or undue differences not now existing will be created. Points in the Southwest and in Kansas-Missouri territory are entitled to rates fairly related to those from or to those cities and others on the Mississippi and Missouri Rivers or to the east thereof. Class rates within western trunk-line territory, including the portions of Kansas on both sides of the line described in note 1 of finding No. 3, and between that territory and official and southern territories are before us in No. 17000, Part 2, *Western Trunk Line Class Case*, and our findings here are without prejudice to those we may make in that case. Class rates within official territory are before us in *Eastern Class Rate Investigation*, No. 15879. Class rates within southern territory are now being readjusted on the bases prescribed or approved in *Southern Class Rate Investigation*. It is understood that in the near future readjustment of many commodity rates within southern territory will be undertaken by the carriers with a view to removing numerous fourth-section departures and other discrepancies now existing with respect to such rates. Neither the record nor the issues in the instant proceedings are sufficiently broad to warrant prescription of reasonable rates between the Missouri and Misissippi River cities and points in western trunk-line, official, and southern territories, or the relationships which the rates from or to such river cities should bear to the rates from or to points within the Southwest and Kansas-Missouri territory. This fact, however, should not prevent the removal of the undue prejudice and preference found to exist within the area here directly involved or the correction of the chaotic rate and tariff situation existing therein. It is possible that many of the undue differences as between points within that area and contiguous competitive points will be corrected as a result of the pending proceedings above cited. If, however, undue rate differences still remain on particular commodities as between points within the area covered by the findings herein and contiguous points without that area, such undue differences may be brought to our attention in an appropriate manner.

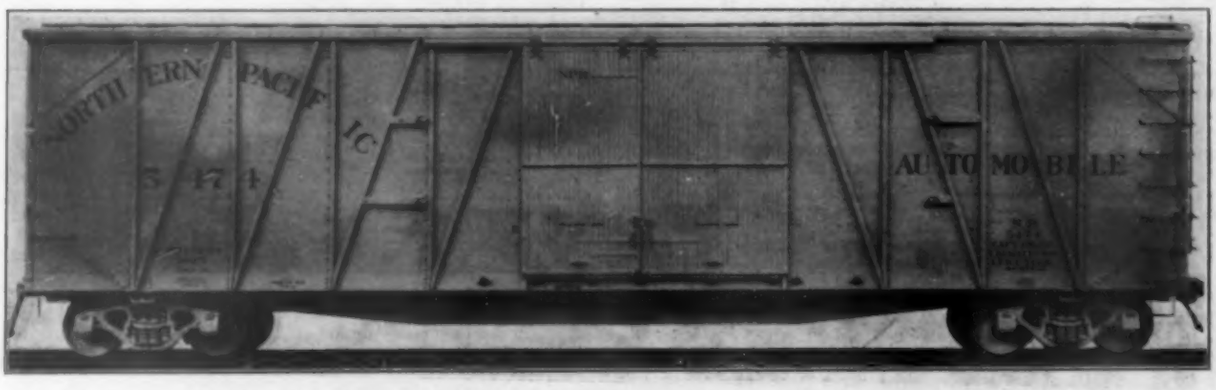
The bases of rates herein prescribed or approved are intended to supersede all adjustments heretofore prescribed by us with reference to all or any of the rates in issue. That being the case, and in order to avoid possible conflicts, an order will be entered modifying outstanding unexpired orders relating to such rates to the extent necessary to permit the carriers to publish and apply the rates herein prescribed or approved. It should be understood, however, that the entry of such order is not intended to set aside the principle followed in *Memphis-Southwestern Investigation*, that the rates between Memphis and points in Arkansas should not exceed the contemporaneous rates intrastate between points in Arkansas by differences greater than reasonable bridge arbitraries, or the principle of the *Shreveport case* to the effect that rates between Shreveport and points in Texas should not exceed those applicable within Texas for like distances.

Defendants will be expected to publish specific rates between the Missouri River cities, southwestern gateways, and defined territories, on the one hand, and points in the Southwest, Kansas-Missouri territory, and Texas and Oklahoma differential territories, on the other. Locally between points within the Southwest, Kansas-Missouri territory, and Texas and Oklahoma differential territories, and between points in any one of those territories and points in any other of such territories, the rates in the first instance may be published as distance scales in order to facilitate publication of the adjustments herein prescribed. Within six months thereafter defendants will be expected to substitute specific rates published in accordance with all provisions of our tariff rules or, in such instances as it is desired to retain distance scales as such, to provide in connection therewith adequate distance tables which fully meet the requirements of our rules. For convenience, we shall expect the carriers to publish the first-class rates and the column 100 rate-base scale separately.

In so far as interstate and intrastate rate relationships are herein found to be unduly prejudicial to interstate, and unduly preferential of intrastate, shippers, receivers, localities, or traffic, we will at this time enter no corrective order. We will for the present leave to the appropriate State commissions and the carriers the matter of adjusting the intrastate rates on bases which will harmonize with the rates prescribed or approved herein and will remove the undue prejudice and preference. If such readjustments are not accomplished within a reasonable time interested parties may bring the matter to our further attention.

Orders to effect our findings in other respects will be entered.

* Note 2—The line of the Frisco from a point just south of Kansas City through Harrisonville and Clinton to Springfield; thence via the Missouri Pacific through Crane and Galena to the Missouri-Arkansas State line.



Automobile Car Built for the Northern Pacific by the Pressed Steel Car Company

Six-Car Rock Island Electro-Motive Test Train Ready to Leave Kansas City, Mo.

Rock Island Adds to Its Power Rail Car Equipment

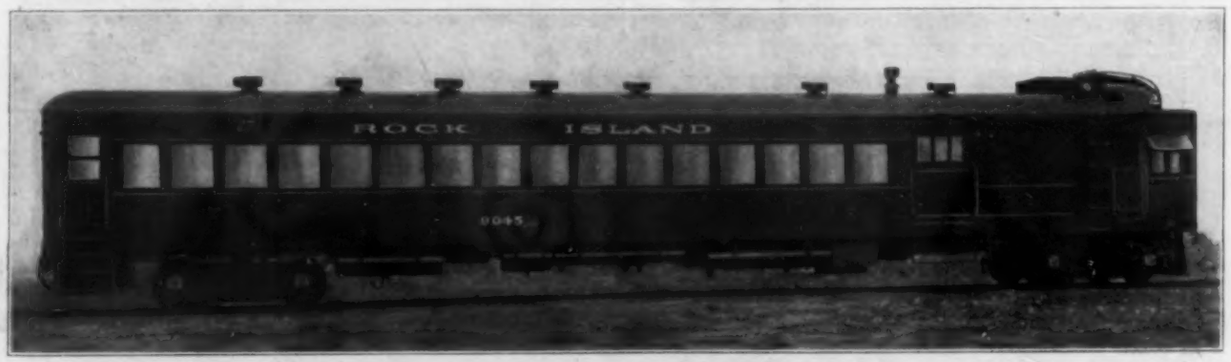
Seven new units burn distillate—Two, developing 550 hp. each, serve as motive power in light passenger and freight service

IN an endeavor to furnish communities served by the Chicago, Rock Island & Pacific with a high-grade local transportation service, this road recently purchased from The Electro-Motive Company, Cleveland, Ohio, five 275-hp. passenger-baggage gas-electric cars equipped to burn petroleum distillate and each having sufficient power to handle a 35-ton trailer in regular service. Two Rock Island 40-ft. mail cars also have been motorized by the installation of dual Electro-Motive type distillate-burning power plants, developing a total of 550 hp. in each car. One of these cars, known as the passenger-motor car power unit, is designed to haul a three-car trailing load of 105 tons at regular local passenger train speeds, and the other, or freight motor car power unit, will haul a maximum trailing load of 800 tons in slow-speed light freight service.

The seven new cars make 14 power rail cars now available for light local service on branch and main lines of the Rock Island and will be put in service as follows: Between Topeka, Kan., and St. Joseph, Mo.; between Eldon, Mo., and St. Louis; between Allerton, Iowa, and Atlantic; between Eldon, Iowa, and Des Moines; between Des Moines, Iowa, and Keokuk; between Washington, Iowa, and Oskaloosa; between Alexandria, La., and Eunice; between Tinsman, Ark., and Crossett; between Booneville, Ark., and Little Rock; between Haileyville, Okla., and Ardmore; between Geary, Okla., and Alva; between Fort Worth, Texas, and Graham; and between Horton, Kan., and Bern.

Six of the new cars, exhibited at St. Louis, Mo., on April 15, were operated as a demonstration train under its own power to Kansas City, where it was exhibited April 17. The train then proceeded to Des Moines, where it was exhibited on April 19, and two cars completed the run to Chicago on April 20, where they were exhibited at the La Salle street station on April 21. On this test run, one of the 550-hp. cars and one of the 275-hp. cars acted as motive power units, hauling a total train weight of 335 tons as far as Des Moines. Between Des Moines and Chicago, the two-car train, with power furnished only by the passenger-motor car on the head end, was operated as the second section of the Rocky Mountain Limited, making the run at the same average speed in spite of an appreciably greater number of stops for purposes of inspection and exhibition. From tests made during this run there is every indication that the new equipment will fully meet the operating requirements for local passenger, express and freight service.

The new all-steel passenger-baggage car weighs 50 tons and has a seating capacity for 77 passengers. It is



New Rock Island 275-hp. Gas-Electric Car, Five of Which Were Furnished by The Electro-Motive Company

furnished with motor drive and controls by The Electro-Motive Company, electrical equipment by the General Electric Company; the car bodies were built by the St. Louis Car Company, St. Louis, Mo. The power plant consists of a Winton six-cylinder petroleum distillate burning engine designed to develop 275 brake hp. at 1,000 r.p.m., direct connected to a G.E. 186-kw. direct current generator, which furnishes power to two 156-hp. special traction electric motors on the front truck. Each car is 72 ft. long, the engine room occupying 10 ft. in the front end; the baggage and express space, 11½ ft.; a smoking compartment, 9 ft., and the main compartment, 38 ft.

The car is finished with Duco lacquer, of olive green color conforming to Rock Island standards. The inside trim is of Honduras mahogany, natural finish, the upholstery being imitation leather. Ample basket racks are conveniently located for the use of passengers. Toilet and drinking fountain facilities are provided in the rear end of the main passenger compartment.

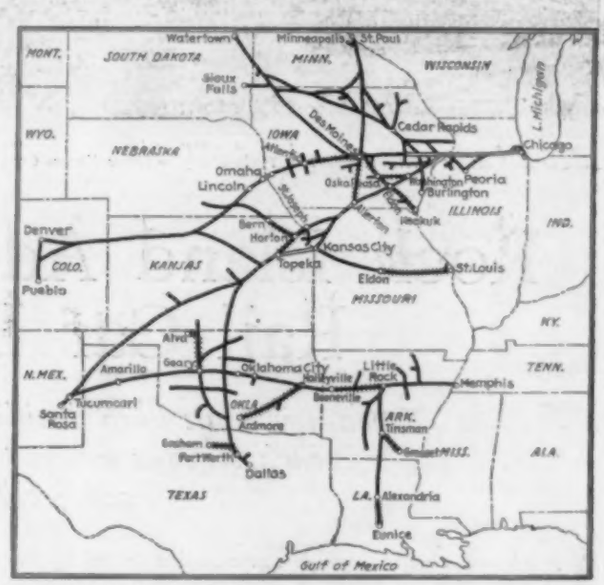
The car is heated with an Areola hot water system, furnished by the American Radiator Company. Electric current for the lighting is supplied by the main power plant and storage battery. The large brass window sashes, furnished by the Curtain Supply Company, Elkhart, Ind., afford wide vision for the passengers and are easy to operate. The cars are also equipped with storm sashes for use during cold weather. Battleship linoleum with metal binding is used in the aisle, and the vestibule floor is covered with rubber tiling similar to that used for Pullman sleepers. The car is equipped with all standard safety appliances. An end door, vestibule with side doors and trap doors are provided. Warning and signals are given by means of a powerful duplex-type Strombos horn and a 12-in. bell.

To provide for possible future requirements, the cars are designed for a mail compartment installation later, if desirable, and also the application of a second 275-hp. power plant should it be found necessary to haul more than one 35-ton trailer in regular service.

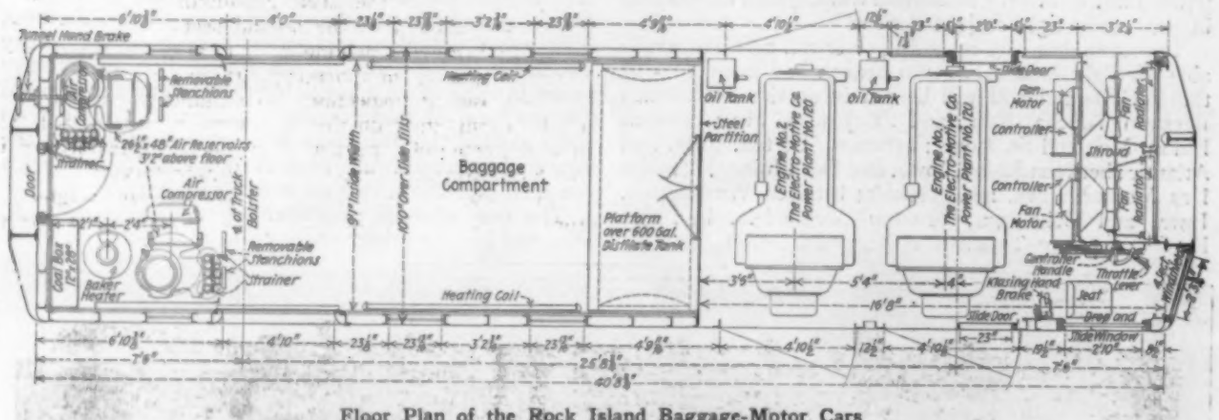
The two-75-ton express-motor cars were converted from Rock Island 40-ft. mail cars, originally built in 1911 by the Pullman Car & Manufacturing Corporation. The work of conversion was carried out at the Rock Island shops, Horton, Kan., each car being equipped with dual 275-hp. gas-electric power plants, furnished by the Electro-Motive Company and arranged to burn petroleum distillate. One of these cars will be used in local passenger train service. It is geared to operate at a maximum free running speed of 60 m.p.h. and is capable of hauling two 30-ton trailers and one 45-ton trailer, or the equivalent of 180 tons total train weight on a line and grade similar to that between St. Louis, Mo., and Eldon in the running time of 310 min., including 35 intermediate stops without any standing time at stations.

The other converted express-motor car is designed for slow-speed light freight duty. It is identical with the first car except for a difference in gear ratio, giving a maximum free running speed of 37 m.p.h. It is designed to haul a gross trailing load of 585 tons at 13 m.p.h. in parallel position continuously on a .5 per cent grade, and in series-parallel will haul 800 tons at 10 m.p.h. continuously on a .5 per cent grade. On a line and grade similar to that between Horton, Kan., and Nelson, this unit is designed to handle 800 tons gross trailing load up a four-mile, one per cent ruling grade at 5½ m.p.h. continuous speed, delivering the equivalent of 24,000 lb. tractive force.

The converted express-motor cars are of all-steel construction with arched roofs, deep center sill underframes, and cast-steel body bolsters, being 40 ft. 8¾ in. long over the corner posts and weighing 147,860 lb. as converted. Two 275-hp. power plants, practically identical with those used in the single unit cars, are mounted transversely in the front end of each car, as shown in the floor plan. The complete power plant, together with suitable control equipment, two radiators with individual motor-driven fans and large distillate tank, occupies 20



Where Motor Driven Rail Cars Are Operating



Floor Plan of the Rock Island Baggage-Motor Cars

ft. of the car, leaving approximately 20 ft. available for baggage and express, and certain equipment in the rear of the car including air reservoirs, air compressor, and a Baker hot water heater. Four-wheel trucks of the Commonwealth cast-steel type are provided with 5½-in. by 10-in. plain journals and 36-in. rolled steel wheels. Arrangements have been made for ready conversion to roller bearings later if desirable.

Power plant No. 1 furnishes power to two special 200-hp. electric traction motors on the front truck and

Converted Rock Island 550-hp. Motor-Baggage Car Ready Service

plant No. 2 furnishes power to similar motors on the rear truck. The control equipment on this car is of the locomotive type and can be operated by the average engineman after a few minutes' instruction. The hand throttle, mounted on a suitable stand for left-hand operation in the right front corner of the car, is directly connected through suitable linkage and hydraulic cylinders to the carburetor throttle valves. Electric control, of the manually operated "K" type, is provided by two mechanically connected controllers operated by a single lever. The hand throttle is connected and interlocked with the electric control and also with the air starters. Automatic governors maintain the speed of both engines constant at 1,000 r.p.m., within five per cent plus or minus, irrespective of the position of the hand throttle. Both engines, forming a complete 550 hp. power plant, are connected to the same hand throttle and are normally operated together, but either one or both may be cut in or out at any time at the will of the operator by pushbutton control of the Boesch dual ignition system. The engine throttle remains closed when the locomotive is at rest and cannot be opened beyond the idling position without an ample supply of lubricating oil for the bearing. In fact, the entire control, including pushbuttons, ignition and exciter switches, reverse lever, electric control and hand throttle, is so connected and arranged as to prevent the possibility of the operator overloading or abusing the engines under any operating conditions.

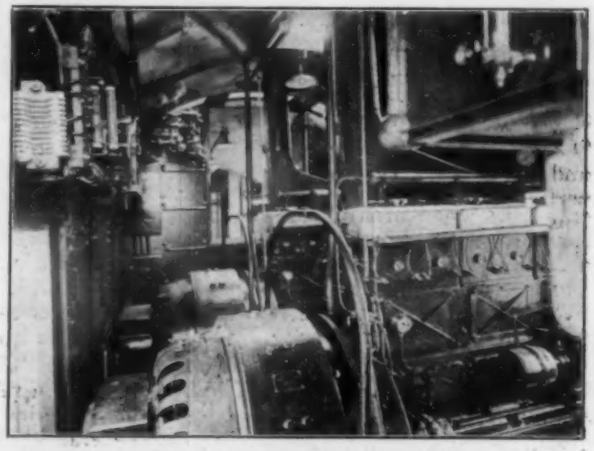
The starting of each engine is accomplished by any one of three systems: (1) a compressed air starting device, the air for which is supplied from the main reservoir of the brake system and used whenever air pressure is available; (2) a two-motor 32-volt starter with suitable connection to the fly-wheel through a Bendix drive operated by pushbutton control; (3) a safe and efficient hand cranking device.

The entire engine cooling system is designed to afford ample capacity for maintaining cooling water temperature to within 90 deg. F. rise when operating under full load and the most severe operating conditions. The radiators are so located as to take advantage of the natural flow of air in the forward or normal direction of car travel. Two fans are driven from direct-connected variable speed, ball-bearing electric motors of the self-ventilating type. The fan motor control is located conveniently near the operator's seat. The cooling system is filled from the ground through a 3-in. filler opening in the roof without liability of syphoning out the water supply.

The engine oiling system is of the dry sump force-feed type, delivering oil to the main bearings by pressure and by splash to the wrist pins and inner cylinder walls. Suitable oil pumps, filters, gages and a radiator comprise the lubrication system which supplies an adequate amount of clean, cool oil at all times.

A special grade of petroleum distillate, known as railway motor fuel and furnished by the Standard Oil Company of Indiana, is burned. This is stored in the 600-gal. distillate fuel tank shown in the drawing. Necessary strainers, dirt and water traps assure a clean fuel supply. There is also a gasoline storage tank of 200-gal. capacity for starting, together with necessary apparatus for supplying fuel under pressure to the carburetors.

Two 50 cu. ft. per min. air compressors supply the brake system and other requirements. They are of the single stage, motor driven type with horizontal duplex cylinders and single acting trunk type pistons designed for air brake service. The compressors are driven by



Interior View of the Engineroom on the Converted Dual Power Plant Car

series wound motors through gearing with accurately cut herringbone teeth.

Electric current for the generator exciter field, engine cranking and car lighting, is furnished by 16-cell, 32-volt Exide Iron Clad batteries of approximately 200 ampere-hour capacity. Semi-automatic battery charging control is provided. Suitable electric meters, oil and fuel gages, pressure regulators, etc., are conveniently located. In addition to the duplex-type Strombos horn for warning signals, each of the motor-baggage cars has a 12-in., 50-lb. bell equipped with a Transportation Devices Company bell ringer.

The trailers designed for use with the motor-baggage cars are standard Rock Island cars which have been converted to meet the requirements of this service for passenger, baggage, mail, or combination. They are also equipped with hot water heating systems and electric lights, furnished through train line connection with the motor-baggage car.

A Total of 250 Delegates Were Present

Claim Men Discuss Personal Injury

Experience shows that the standardizing of signals at grade crossings reduces accidents

PRACTICAL accident prevention and the standardization of signals at grade crossings as an aid in claim work, were among the subjects discussed at the thirty-eighth annual convention of the Association of Railway Claim Agents at New Orleans, La., on April 20-22. The meeting was attended by 250 delegates and was presided over by President Robert Irwin, general claim agent of the Atchison, Topeka & Santa Fe, Coast Lines. Other subjects discussed were: "Should a claim agent be a notary public?" presented by C. W. Egan, general claim agent of the Baltimore & Ohio; "Which is preferable, state compensation, federal compensation or the common law?" by O. G. Browne, claims attorney of the New York Central; "How best to check up applicants for train and switching service and what safeguards should be employed," by S. M. Copp, general claim agent of the Illinois Central; "The American jury," by Smith R. Brittingham, assistant general solicitor of the Seaboard Air Line; "Is it good practice to undertake immediate settlements with injured passengers in derailments and collisions?" by T. J. Williamson, district claim agent of the Wabash.

Officers elected for the ensuing year were: President, C. S. Williston, claims attorney for the Pullman Company; first vice-president, O. G. Browne, claims attorney of the New York Central; second vice-president, J. C. Hume, general claim agent of the International-Great Northern; and third vice-president, E. L. Williams, general claim agent of the Baltimore & Ohio. H. D. Morris of the Northern Pacific was re-elected secretary and treasurer.

Crossing Signals Should Combine Flash and Stop Feature

The addition of the word "Stop" to a flashing signal and audible signal has reduced accidents materially, and on one crossing where there were 25 accidents a year before the application of the word "Stop," none occurred following the change, according to George J. Cooper, general claims attorney of the Grand Trunk at Detroit, Mich. The combined signal was developed by the Grand Trunk in the Detroit area where it was found that the flashlight was of little value as many advertising signs use the pulsating light to attract attention and many of these were erected near railroad crossings by insurance companies to call attention to the advisability of having insurance in the event of an accident. These lights were caused to pulsate constantly and thus minimized the warning intended to be conveyed by the railroad's flashlight which, being operated from a track circuit, only functioned when a train was approaching. The confusion of the autoist was further increased in the Detroit area by the suspension of pulsating red lights over the intersection of street car tracks and main traveled highways and since they operated continually, were intended as a signal of caution and not one of danger. Wayne county, in which Detroit is situated, is estimated to have a population of 1,870,326 in 1926 and a motor-driven vehicle registration of 394,322, or one car for every four people.

During a period of one year, statistics were kept to show the results of different types of crossing protection. The results are shown in Table I. The wig-wag and bell, the flagman, the flashlight, the gate and the flashlights with stop signs were used almost exclusively on heavily traveled highways. All of the latter signals were not in service at the commencement of the period reported but were put in service shortly after. The figures for the bell only and for unprotected crossings indicate the performance at crossings located in country districts where travel is light and are, therefore, not comparable with the others named.

The combined flash and stop sign has been the result of experimenting, in which the engineering department of the railroad, the Michigan Public Utilities Commission and the Railroad Supply Company, co-operated. The signal bears the standard cross-arm at the top with the legend "Railroad Crossing." Below that appear two

pulsating red lights 2 ft. 6 in. from center to center, equipped with 8-in. lenses. The lenses are of such construction as to enable one to see them against the bright sunlight for a distance of over 300 ft. The ability to see the light is further enhanced by a 10-in hood extending out from the top of the lens. The word "Stop" consists of four separate lights mounted in a vertical position on the main standard of the signal and are faced with opaque glass so that when the motorist approaches the crossing and the signal is not operating, the word "Stop" does not appear.

TABLE I

Type	No. of Streets Protected	No. of Accidents	Comparative Percentage of Safety
Wig-wag and bell	51	18	64.7
Flagman	75	40	46.7
Flashlights	40	28	30.0
Gates	111	87	21.7
Flashlights with "Stop" sign	24	nil.	100
Bell only	53	8	84.9
Unprotected	1,157	177	84.7

This feature was incorporated so as not to conflict with the laws of certain states where motorists are not required to stop at railroad crossings. This signal is coupled up in three circuits, one to operate the bell, the second to operate the flashlights, and the third to illuminate the word "Stop." The failure of any one or two of the circuits does not affect the operation of those remaining, so almost without exception some warning is given, even when some circuits are not functioning. The power is furnished from a commercial supply where available. Storage batteries, which are charged from the commercial supply, are used as a reserve supply and if the commercial current should be cut off an automatic relay cuts the signal in on the battery. The bell was installed to afford protection to pedestrians who were not in a position to see the signal when using the left side of the street.

Action of Signal

When the track circuit is closed by an approaching train the pulsating red light immediately starts to function, the bells ring and the word "Stop" is illuminated in red letters, this illumination remaining constant. Where the width of a highway permits, signals are placed in the center of the road and where the travel is heavy or where there are several tracks, two signals are erected, one on either side of the railway. Where the signal is mounted in the center of the highway pilot lights are placed on the signal and contain either red or amber bulbs to indicate an obstruction in the highway. Where the width of the highway does not permit of the erection of these signals in the center of the road, they are placed on the traffic or right side, one on either side of the crossing, set up close to the curb line. They have been found equally effective in either position.

Adopted as Standard

This stop flashlight signal has been adopted as standard by the Detroit Terminal, the Detroit & Toledo Shore Line and the Grand Trunk. On the Grand Trunk 75 signals are in operation and while 5 accidents have occurred on crossings so protected they are the result of absolute recklessness and could not have been avoided by any kind of protection. There are 20 such signals in operation in Detroit alone.

In order to avoid disputes as to whether or not the signal was actually functioning, a slit or peep-hole was cut in the side of the light unit in which the pulsating light functioned, so that the train crews are able to see them. This slit shows a white light and can readily be seen by the engineman or fireman or other members of a crew upon approaching the crossing. It is white in color and eliminates any possible confusion with other signals concerning the train crew. The installation of this peep-hole has made it possible for crews to testify that as they approached the crossing they saw the light properly functioning and has been a big factor in proving that the signal was actually functioning prior to and at the time of the accident.

Effective Co-operation Needed

Frank Wenter, Jr., general claim agent of the Chicago & North Western, spoke on practical accident prevention, giving several suggestions for raising the efficiency of the supervisory forces in accident prevention work. His address in part follows.

"The departments of the railroad primarily charged with the duties of investigating accidents and injuries, are the claim and safety departments. These departments are therefore in a position to ascertain at first hand the causes of accidents and injuries, where they take place, and where the responsibility for them should be placed.

"While this information is necessary to the proper and equitable disposition of claims arising out of such accidents, it should also be utilized in accident-prevention activities. The claim man should, at all times, consider himself an accident prevention agent and utilize the information gathered in his investigation of cases, as well as information derived from general observation, in the prevention and elimination of causes that create his claims. I believe that the time has passed wherein a claim man can feel that he has reached his highest

value to his railroad in confining his efforts solely to the efficient handling of the claim.

"The cost of claims can be reduced by efficient handling, but the final cost is not eliminated thereby. Prevention of the accident is the only way to eliminate entirely the cost of the resultant claim and waste.

"In the practice of accident prevention by the claim and safety man, I appreciate the fact that he possesses no power to enforce safety rules and regulations, and that such power is possessed by other supervisory officers. This being so, we must look to the supervisory personnel which possesses this power as the source of effective and constructive initiative and practices in accident prevention work. At best, the claim and safety man stands in the position of an advisor and instructor.

Direct Authority Needed

"I have, for some time, felt that as a result of the claim and safety man not being in direct authority over the activities of the supervisor and employee in their routine work, we find too much of an attitude or frame of mind in supervisors and employees that what they do or don't do in accident prevention work is in the nature of a favor granted the claim or safety agent, as something outside of, extra, and not part of their regular duties and work. Such an attitude or frame of mind on the part of a supervisor or employee is not only a mistaken one, but weakens and lessens the efficiency of the claim and safety man in his efforts toward accident prevention. The attitude, that accident prevention is not an integral part of one's duty and employment, must be changed, before we can expect the proper response to the claim and safety man's efforts.

"The effective co-operation of the foreman in accident and waste prevention activity necessarily implies that the management of the railroad is sincere in its commitment to having the work done safely, as well as done right, and to the degree that the management of the railroad is committed to a policy of accident prevention, is the same reflected in the degree of sincerity of purpose and activity that will be found in the supervising officer and foreman as an initiating impulse toward accident prevention activities.

"Effective co-operation and aid will be given claim and safety men in stimulating the interest of the supervisor when the management convinces the supervisor, and, through him, the employee, that accident prevention is integrally an important and necessary part of supervision and efficient performance, and that the record made in that regard will be used as one of the yardsticks in measuring the supervisor and employee's efficiency.

To Raise Efficiency

"To raise the efficiency of the supervisory forces in accident prevention work, I suggest the following items for consideration: (1), a continuing and effective display of interest by the management in the accident records made by their supervisory forces; (2), the listing of accidents and injuries under the name of the supervisory officer or foreman so as to make his record available, rather than the recording of accidents under division, shop, or like headings; (3), the recognition by the management of the standing in accident prevention as an essential item in scoring the efficiency of the supervising officer; (4), a careful scrutiny of the new man entering the service as to his mental and physical qualifications; (5), furnishing the new man with information as to safety practices, rules, and regulations; (6), a revision of the book of rules to the end that rules obsolete or unenforcible be eliminated. The adoption of safety rules, either separate or in addition to operating rules, so as to permit of disciplinarian action; (7), the enforcement and periodical check-up, through surprise tests, by supervisory officers and foremen, of the observance of safety rules and regulations, as well as operating rules; (8), a periodical re-examination on safety and operating rules. This is important on roads where there is a long lapse of time between the date of examination and the actual assumption of the position examined for; (9), a periodical physical re-examination of employees in train, engine, and like service; (10), the listing of accidents and injuries on the personal record of employees so as to permit of the elimination of chronic offenders in carelessness; (11), divisional and departmental meetings of supervisory forces for the discussion of accident prevention activities, and the presence of the claim and safety men at such meetings; (12), an opportunity be given claims and safety departments to check new equipment and installments as to safety factors and issuance of safety instructions."

THE NORTHWESTERN PACIFIC on April 14 celebrated the launching of its new Diesel-electric ferry boat the "Mendocino." A special ferry boat, serving luncheon, took the guests from San Francisco to the yard of the Bethlehem Shipbuilding Corporation for the occasion.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended April 16 amounted to 956,875 cars, a decrease of 7,919 cars as compared with the loading for corresponding week of last year, but an increase of 33,031 cars as compared with 1925. The decrease is principally accounted for by the reduced coal loading, which amounted to 152,778 cars, although there was also a reduction in the loading of grain and grain products, livestock, coke, forest products and ore, while merchandise and miscellaneous freight showed increases. There were also reductions as compared with last year in the Eastern, Allegheny and three western districts, while increases were shown in the Pocahontas and Southern districts. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

WEEK ENDED SATURDAY, APRIL 16, 1927

Districts	1927	1926	1925
Eastern	232,170	236,672	220,075
Allegheny	198,288	203,644	188,478
Pocahontas	59,120	48,859	44,897
Southern	158,754	154,549	150,269
Northwestern	115,317	117,216	122,032
Central Western	125,192	130,769	125,084
Southwestern	68,034	73,085	73,009
Total Western districts	308,543	321,070	320,125
Total all roads	956,875	964,794	923,844
Commodities			
Grain and grain products	34,926	37,734	31,774
Live stock	25,850	27,303	30,207
Coal	152,778	167,259	135,721
Coke	11,670	12,513	11,118
Forest products	68,274	75,691	76,987
Ore	12,591	14,003	20,601
Mdse. L.C.L.	268,984	264,919	258,674
Miscellaneous	381,802	365,372	358,762
April 16	956,875	964,794	923,844
April 9	959,474	929,343	918,400
April 2	992,745	928,303	923,400
March 26	1,008,888	967,945	932,769
March 19	1,006,861	977,018	911,481
Cumulative total, 16 weeks	15,274,169	14,805,425	14,548,053

The freight car surplus for the week ended April 7 averaged 254,095 cars, an increase of 5,618 cars as compared with the preceding week. This included 80,309 surplus coal cars and included, as well, 128,900 box cars.

Car Loading in Canada

The Easter holiday affected revenue car loadings at stations in Canada for the week ended April 16 which were 5,257 cars less than the previous week and 1,929 cars below those of the same week last year, and are shown in the table below:

	Total for Canada			Cumulative Totals to Date	
	Apr. 16,	Apr. 9,	Apr. 17,		
COMMODITIES	1927	1927	1926	1927	1926
Grain & Grain Products	5,734	6,863	6,602	119,926	100,696
Live Stock	1,735	2,318	2,125	31,148	31,016
Coal	5,402	5,664	4,062	95,729	67,669
Coke	325	272	331	5,441	7,049
Lumber	3,560	3,730	3,476	47,834	49,296
Pulpwood	2,469	3,113	2,510	78,667	55,919
Pulp and Paper	2,263	2,191	2,291	33,346	39,217
Other Forest Products	2,723	2,937	3,280	50,427	53,532
Ore	1,449	1,328	1,369	20,961	21,301
Merchandise, L. C. L.	15,845	17,650	17,031	244,015	226,818
Miscellaneous	13,248	13,944	13,605	178,145	170,580
Total Cars Loaded	54,753	60,010	56,682	905,639	823,093
Total Cars Rec'd from Connections	44,894	39,692	38,522	592,085	559,275

Safety Section Reports a 19 Per Cent Reduction of Accidents

This result accomplished in three years in effort to reach goal of 35 per cent set for 1930

President Aishton of A. R. A. Presents Gavel to Chairman Carrow.

THE public and the railroads were called upon by President Coolidge to exercise greater caution at highway grade crossings in an effort to bring about a reduction in the number of accidents at such points in a letter addressed to Thomas H. Carrow, chairman of the Safety Section of the American Railway Association, and read at the opening session of the seventh annual convention of that organization, which was held at Chicago on April 19 to 21. President Coolidge said in part:

"The Safety Section of the American Railway Association, in endeavoring to lessen the number of fatalities and injuries at railroad-highway crossings throughout our land, is occupied with an important and creditable task. The loss of 2,492 persons, and injuries to 6,991 others, in the year 1926 in crossing accidents demonstrates the need of more care and caution. Unquestionably the railroad must be required to give ample warning of the approach of trains to highway crossings, and throw around the highway traveler at such crossings suitable safeguards appropriate to the volume of traffic. With equal force there must be public recognition of the need of a very high degree of care on the part of motorists approaching and passing over railroad crossings. If that care which prudence dictates is exercised at crossings by all users of highways, then we shall surely curb the increasing tragedies. The influence of that care and prudence will also be reflected in reducing the vast number of street and highway casualties with which we are afflicted. It is my earnest wish that all motorists and all railroads exercise that skill, judgment and caution which assures safety at grade crossings."

The Safety Section meeting was attended by over 350 representatives of the railroads and the attendance including guests and ladies numbered 500. The main features of the three-day session were the presentation of a gavel to the association by R. H. Aishton, president of the American Railway Association, and the participation of operating men in the meeting. This is the first time that operating men have been invited to take an active part in a Safety Section meeting. At the close of the meeting the following officers were unanimously elected for the ensuing year: Chairman, L. F. Shedd, superintendent of safety of the Chicago, Rock Island & Pacific; first vice-chairman, D. G. Phillips, superintendent of safety of the Wabash; and second vice-chairman, L. G. Bentley, general safety agent of the Chesapeake & Ohio.

During the discussion of safety kinks, the Belt Railway of Chicago reported that injury to the fingers of men using clawbars is being prevented by applying a ring or collar, one sixteenth inch high, to the bar at the point where the bar normally will come in contact with the rail when a spike is being drawn from the inside of an opposite rail. The ring reminds the man that there is a danger area and he makes certain that his hands do not grasp the bar so that his fingers will be crushed in case the bar comes in contact with the rail. The Canadian National has designed a set of brackets for motor rail cars which prevents the car from leaving the track after the wheels are derailed. Four brackets are used on each car, two in front and two in the rear, each located two inches above the rail in front of the wheels. The bracket is one foot wide and has a one-inch flange on each end. When the wheels leave the rails the brackets fall onto the rails and the friction between the brackets and the rails acts as a brake.

Mr. Aishton Presents Gavel

In concluding his address on "Railroad Safety—A National Asset," Mr. Aishton presented the section with a silver mounted gavel in which was inlaid a piece of wood taken from one of the first railway coaches operated in America, as a token of his appreciation of the work already done, and as an incentive to the goal the section is endeavoring to reach by 1930. The wood came from one of the old horse-drawn cars operated in 1831 between Baltimore, Md., and Ellicott City, and was presented to Mr. Aishton by Daniel Willard, president of the Baltimore & Ohio. The gavel contains the following inscription on the silver plate: "American Railway Association—Safety Section, 1927, '35 Per Cent Reduction by 1930.' It can be done. R. H. Aishton, President."

Mr. Aishton urged the association to continue its activity in an effort to bring about still greater reductions in accidents, saying that the management of each road has been alert at all times to bring about and put in effect measures to obtain safety. It looks to the Safety Section and to what it recommends for guidance in the managements' activities. He spoke in part as follows:

"Has this safety work which you are doing, been of any value to the nation, to say nothing of value to the individuals and their families? Had the same proportion of fatalities and injuries occurred during the years 1921 to 1926 that occurred in 1920, 2,634 railroad men would be lying in their graves today instead of enjoying the benefits of citizenship in this great country, and 22,790 employees who today are whole men physically, insofar as their railroad responsibility is concerned would have suffered injury.

"We cannot too often remind ourselves that the gospel of safety which we preach and practice is an inspiring and optimistic one.

Safety pays in dollars, yes. But more than that, it repays us richly for the efforts we make, and those dividends are the far more important ones of conservation of human life and limb, and the increase of happiness and good cheer.

"The engines of peace are no less deadly than the engines of war. The casualties of peace are even more terrible than the casualties of war; for the victims of war were men, strong to endure suffering, but the victims of peace are often helpless babes in mothers' arms. Let us give the same thought and efforts towards controlling loss of life and mutilations due to injuries of peace that nations today are giving towards lessening the casualties of war.

"Three years ago you set a goal of 35 per cent in the reduction of accidents to employees by 1930. In three years you have reduced these accidents 19 per cent, with four years to go. You are now in advance of your schedule and it is in your power to beat the time set by a considerable margin.

"One of the foremost problems that faces the railroads today is the increase in the number of grade crossing accidents. The constantly increasing use of automobiles makes a solution of this problem all the more important.

"The railroads of this country have given and are giving serious consideration to this subject and are constantly doing everything within their power to bring about increased safety at highway crossings. Despite their efforts, as well as those of various other organizations interested in safety, there was an increase of 286 fatalities due to grade crossing accidents in 1926 over 1925. Last year, 202 persons were killed and 1,430 injured as a result of automobiles running into the sides of trains while automobile accidents at railroad crossings resulted in the death of 50 and injury to 69 passengers and employees of trains.

"A greater realization on the part of the motorist that he, too must co-operate with the railroads and use increased care in approaching and passing over such crossings is necessary. If this is done there can be but little doubt that a reduction in grade crossing fatalities will be brought about."

Highway Crossing Accidents

The Committee on the Prevention of Highway Crossing Accidents, H. A. Rowe (D. L. & W.), chairman, reported that the year 1926 was an unfortunate one in that an increase of railroad highway crossing fatalities and injuries occurred, there being 2,492 deaths and 6,991 injuries. However, in comparison the number of automobiles upon the highways is in excess of 22,000,000 or one automobile for every 5¼ persons within the nation. Over a 20-year period from 1906 to 1925, inclusive, the number of railroad-highway fatalities has increased 137 per cent, while the number of all other highway fatalities has increased 5,149 per cent, the number of the latter now being in excess of 600,000 per annum. It was felt that if a wider distribution be made of the posters and the booklet on safety the number of fatalities and injuries would be less for 1927. As a means of circulating information arrangements have been made for the gratuitous distribution through the National Safety Council of 50,000 copies of the poster at places not in conflict with railroad distribution.

The committee has been in close touch with the national headquarters of the Boy Scouts of America and has offered several suggestions relating to crossing safety, and as a result these will be included in the scout handbook. The scout patrols have agreed to assist in the distribution of crossing safety literature and if desired on specified dates will be stationed at crossings where they will deliver booklets on safety direct to automobile drivers. The Girl Scouts of America also have expressed their desire to co-operate. The president of the American Automobile Association has given the committee the opportunity to place the booklet in automobile clubs for distribution to members. The committee also reported that there is a wide field for the booklet in ticket windows, in dining, club, lounge and similar cars.

Persons Killed and Injured in Highway Grade Crossing Accidents

Year	Killed	Injured	Automobiles Registered	No. autos per death	No. autos per injury
1921....	1,705	4,868	10,464,005	6,137	2,150
1922....	1,810	5,383	12,357,376	6,827	2,296
1923....	2,268	6,314	15,092,177	6,654	2,390
1924....	2,149	6,525	17,591,581	8,186	2,849
1925....	2,206	6,555	19,843,936	8,995	3,027
1926....	2,492	6,991	22,046,957	8,847	3,154

The essay contest which will be participated in by grammar school, high school and college students and in which cash awards amounting to $750 will be made to the three successful contestants is expected to have a desirable effect. The contest has received favorable publicity, a total of 600,000 items having appeared in newspapers throughout the country.

Train Accidents Increased

The Committee on Train Accidents, F. Hartenstein (L. V.) chairman, reported that train accidents increased 121 in 1926, the number of employees killed decreased 42 and the number injured increased 140. The number of passengers and other persons killed decreased 16 and the number injured decreased 136. The figures in detail are shown in Table I.

Table I

	No. Accidents Resulting in	Employees		Passengers and other persons		Total persons	
1925	Casualties	Killed	Injured	Killed	Injured	Killed	Injured
Collisions	480	86	699	38	1,063	124	1,762
Derailments	554	122	620	104	1,291	226	1,911
Loco. boiler accidents	24	15	42	...	...	15	42
Other locomotive accidents	15	1	17	...	6	1	23
Miscellaneous	122	11	112	41	62	52	174
Total	1,195	235	1,490	183	2,422	418	3,912
1926							
Collisions	599	107	877	45	1,442	152	2,319
Derailments	542	64	599	77	763	141	1,362
Loco. boiler accidents	25	14	34	...	7	14	41
Other locomotive accidents	16	..	17	1	2	1	19
Miscellaneous	134	8	103	44	72	52	175
Total	1,316	193	1,630	167	2,286	360	3,916
	121*	42†	140*	16†	136†	58†	4*

* Increase. † Decrease.

A detailed study of the principal causes of train accidents showed that conductors and trainmen were responsible for 29, the maintenance of way department 13, the motive power and engineering departments 11, and locomotive boiler and other locomotive accidents 12.

To decrease train accidents it was recommended that there be a more rigid inspection of materials applied to locomotives, cars, rails and other equipment by the manufacturers and a closer inspection of locomotives and cars at terminals and other inspection points on the line by competent inspectors. In addition, there should be a close inspection of track materials, track and roadbed by qualified men who can and will maintain them in a manner to insure safe train operation. In addition, a thorough inspection of air brake equipment and the enforcement of all rules and instructions were recommended. The committee suggested that card indexes be started in the office of the division superintendent and system shop superintendent and that these records be frequently brought to the attention of supervisory officers to show them just how their accident records stand.

Safety from General Manager's Standpoint

C. I. Leiper, general manager of the Central region of the Pennsylvania, in speaking on "Safety From a General Manager's Standpoint," said that the thing of prime importance is for the general manager to recognize his own responsibility and in turn emphasize the responsibility of general and division officers, their assistants and supervisory forces, in effecting a safe performance in whatever departments or branches of the service they may be engaged. He described the safety organization of the Pennsylvania which is divided between the Eastern, Central and Western regions and the Altoona works.

A general manager is in charge of each region and a works manager is in charge of the Altoona works. There are nine general divisions and 39 divisions, exclusive of the Altoona works. The safety organization provides for regional, divisional and local safety committees and prescribes the duties of officers, supervisory forces, safety agents and employees with respect to safety matters. The regional safety committees have general supervision of safety matters in their respective regions and pass upon all questions and policies affecting safety in the region. The Central Region committee is composed of the general manager who acts as chairman, the assistant to the general manager who is vice-chairman, the general superintendent of the division, the general superintendent of motive power, the chief engineer of maintenance of way, the chief claim agent, the superintendent of police, the medical examiner, the superintendent of the insurance department, the superintendent of the relief department, and the supervisor of safety.

The regional committee meets quarterly. A docket is carefully prepared and complete information on each subject listed is worked up prior to the meeting so that an orderly and systematic procedure may be followed. The record of every division and every department is presented as well as the record of casualties to passengers, and others, and the payments made on account thereof. Each division is provided with division and local committees composed of officers and employees organized much the same as the committees on most of the railroads of the country.

In 1926 the Pennsylvania showed a reduction of 23 per cent in injuries to employees reported to the Interstate Commerce Commission as compared with 1925. Five divisions operated throughout the year without an employee being fatally injured. In the Central region one of the divisions operated 48 consecutive days without a reportable injury; a steel car shop employing 866 men at which an average of 32 old cars are dismantled and a like number rebuilt per day, operated 50 consecutive days without an accident. This performance was repeated for a period of 42 days, February 17 to March 31, 1927.

Two Long, One Short and One Long

D. G. Phillips, superintendent of safety of the Wabash, cited the advantages of two long, one short and one long blasts of the locomotive whistle on approaching a highway grade crossing as a warning to prevent crossing accidents and showed the results of one year's trial on his road.

"The value of this proposed crossing signal," he said, "lies chiefly in the fact that in its execution it is so arranged that it is in full operation at the very time it is most apt to be heard, as the last blast continues up to the crossing. The whistling post is often 1,320 ft. from the crossing. In the case of slow moving trains the automobile is twice as far from the crossing as is the locomotive at the time the crossing signal is commenced, and in the case of two long and two short blasts, is a long way off at the time the principal part of that crossing signal is given. Hills, woods and houses intervene to shut off the sound. When no railroad tracks or signs are in sight the mind of the auto driver is occupied with thoughts that tend to shut out the sound of the whistle, even if it could be heard above the rattle of the Ford. The whistle that attracts his attention must be close by and at a point where the varied surroundings render his mind most apt to be affected by a whistle and this point is surely at the crossing itself with the tracks, the crossing boards and other crossing signs suggesting a train and causing the mind to receive and classify more readily as a locomotive whistle a sound that comes to him under such conditions.

"The prescribed whistle is easy of application. There is no misunderstanding of its meaning and there is only one way to comply with it. With trains traveling at varying rates of speed over different crossings with different approaches it is impossible for the engineer to judge always just how to regulate his whistling so as to have the one short blast left over for use at the crossing. One of the principal objections to the old whistle, even with the injunction to sound that short blast at the crossing, is that it does not provide a maximum sound at the point where there is a maximum of hearing. With the long blast close to the crossing, we have the same beginning and the same ending as the short blast plus duration which renders it much more apt to be heard as it extends over a greater period of time and is more apt to find a point of penetration in the mind of the auto driver.

"We are having many experiences that indicate the value of the last long blast just before the crossing is reached. Every few days we find autos turning down the right-of-way instead of running in front of the locomotive, indicating a last-second hearing. On April 1 the Wabash ended its first year's trial of the two long, one short and one long blast and during that time we had 21 fatalities at highway crossings as compared with 49 the previous year. I am not able to say that all of this reduction was due to the new method of whistling. Neither will I admit that the record would not have been still better if we had succeeded in getting the best of whistling, that is, 100 per cent compliance with two long, one short and one long."

Superintendent and Staff Responsible for Safety

The results obtained in any policy on a railroad depends primarily on the individuality and effectiveness of the division superintendent and his ability to put this policy down to the worker, the man who actually executes the orders through his various division officers, according to Donald F. Stevens, general superintendent of the Baltimore & Ohio. "It matters not how much the president, vice-president, superintendent of safety, general managers or general superintendents know about safety if they aren't able to drive it down to the man on the ashpit, the man with the tamping bar, the man with the truck in the freight-house, or in other words the executor whose safety we are guarding. One of the fundamental and underlying principles that we certainly must agree on that is necessary first to start this work is to know the physical and mental condition of the man who seeks employment as a new man on a railroad. I do not believe, generally speaking, that the railroads of the United States have given this matter the thought and consideration that it is entitled to and through this lack of thought and attention it is not infrequent that men get into the service of the railroads who are fitted neither mentally nor physically for the work that is ahead of them, and later on you find them on the lists of employees who have suffered as a result. These men come into service at times when the stress of big business is on, when yards are full, and every locomotive is in service. It is hard to suggest a cure for a situation of this kind. On the other hand, on some of the divisions that I have seen at times of this kind, men of low mentality crept in and they are still in the service, while on adjoining divisions the superintendent seems to have been able to surmount this situation and after it had passed, the division was not marred by this character of man. The increasing tendency to careful checking by medical officers is helping to reduce this situation. Too often when a man is hired he is seen by a clerk and thrown into the ranks, which I think we will all admit is a mistake as the trained road foreman of engines, trainmaster or other officer could much better have afforded to weed him out at that time than to have let him go on and embarrass the railroad later.

"There are places where officers are making efficiency checks simply to fill up the form which they have to submit once a month and they are not surprise checks in the sense that they were intended to be. On other territories the officers make these checks religiously and the difference in the observation of train rules on the two territories is distinctly apparent. It is axiomatic that if a set of men know that they are to be checked at irregular hours and times and at irregular places it will have a tendency to keep them alert and again the work of the superintendent may be felt in this respect. I have seen superintendents who themselves go out at odd hours of the night and make checks with their staff officers and it has resulted in material good. On the other hand, some superintendents simply make their reports from observation tests and accept the same kind of reports from their officers.

"On divisions where the superintendent follows a case of injury closely and keenly an officer is sent immediately to confer with the man to see how badly he is injured and if it is not possible to get him back to work. On one division the total man hours per year lost by employees on account of accidents per thousand man hours worked is very much higher than it is on an adjoining division despite the fact that in the case of the former division the traffic is lighter and the physical conditions of the two divisions are about equal. An analysis as to the cause shows that the medical representatives on the first division were not as careful in seeing that men got back to work promptly as they were on the latter division. This is a matter that the superintendent must follow up closely.

"We have had this year in my territory various forms of contests between divisions in safety work. We compare our car shops, our locomotive shops and the divisions one with the other, usually based on man hours. We have a large flag

which passes from one division to the other as the figures at the end of the month show the greatest number of man hours produced per injury; incidentally when this started, the division which made the poorest showing for several months has now become the permanent possessor of the pennant. It was largely through the earnest efforts of the division superintendent of that particular division that he has been able to accomplish this result.

"The division superintendent and the staff officers should know the number of injuries for each month, compared with the same month the previous year or similar figures for comparative purposes so that they can discuss it intelligently with the men as they get to them. There are two sides to the safety work, namely the humane and the financial. Basically we are intrested in safety work for humane reasons but I wonder if some of the division officers appreciate the fact that in the year 1925, of all the operating expenses of the American railroads, two and one-half per cent could be charged to injuries on their division or in other words, out of every dollar taken in in earnings two and one-half cents went to pay this big bill."

Division Engineer Should Preach Safety

George H. Warfel, assistant to the general manager of the Union Pacific, told how the division engineer can do his part in the promotion of safety.

"The relation of the division engineer to safety," he said, "is fundamental. Being responsible, for the largest third of the division personnel, it would follow that at least a third of the personal injuries might be expected from his department. When it is also considered that a large part of the work done by his forces directly involves the safety of train operation, it is apparent that upon him will depend in large measure the safety record of the division and of the railroad. To improve the safety record of his road, he will probably consider two major problems, the reduction of train accidents caused by track and bridge conditions, and the reduction of personal injuries to employees. The division engineer will do much on his own initiative but he will do very much more if his superintendent is as vigorous and aggressive in safety work as he should be. On a railroad, inspiration, like criticism, should properly come from above down through the organization and this is especially true of accident prevention.

"If our division engineer is properly inspired, he will be one of the strictest disciplinarians on the road. The men under him will perform their duties satisfactorily and the least failure will be followed by summary discipline. His immediate subordinates, the supervisors and roadmasters, must be shown that reluctance or indifference in matters of discipline on their part will subject them to the same sort of treatment. That is the most reliable preventative for train accidents caused by man-failure that has ever been devised up to now. Cordial and friendly relations with employees is the most desirable condition but it should not exist at the expense of discipline.

"There are two ways of determining the occasion for discipline. A long established custom has been to administer punishment after the accident, graduated according to the seriousness of the actual results. A more effective method from the standpoint of accident prevention is to administer the discipline before the accident, graduated according to the gravity of the hazards incurred by improper performance.

"By far the greatest opportunity for the division engineer to improve safety performance lies in the reduction of fatalities and serious injuries to his employees. In 1925 the Interstate Commerce Commission's report shows that the division engineer's men worked over 972,000,000 hours or more than one-fifth of all the hours worked on the nation's railroads, including the time of presidents, clerks and office boys. In other words, he averaged 400,000 men on the job for eight hours each regular working day except two. Over half of those hours were worked by section laborers, their fatal injury rate while on duty being 0.43, as compared with an average for all employees of 0.33. The track foreman's fatality rate is 0.44 and is worse than that of the laborers, probably due to the fact that he is the last to leave the track. The bridge and building carpenters had a fatality rate of 0.57 and a serious injury rate of 43.28 compared with an average of 25.77. The fatality rate for linemen on duty is 0.75, and for signalmen and maintainers 1.10.

"In view of this report, what should the division engineer do? First, the superintendent must back him up when he insists upon the management providing first-class tools that are proved by field tests and laboratory analysis to be the best. We must have good repair shops manned by men who know the service these tools must stand and how to properly condition them. We must handle the track car situation the same way and should have better cars."

As a means of disseminating information to the employees who are scattered over the system, he suggested that the superintendent, the bridge supervisor, the roadmaster, the division engineer and the safety agent spend five days each month on the road, furthering safety. He said a five-day motor car trip each month will do each superintendent as much good as it will the safety work as he will see more and know more of the work of the men.

Trainmaster's Responsibilities

J. A. Nichols, trainmaster of the Chicago division of the Cleveland, Cincinnati, Chicago & St. Louis, spoke on "The Trainmaster and Safety." He said in part:

"In a general way, the problem of accident prevention promotion in the operating department depends very largely on the ability of the supervisory officials to recognize and encourage those attributes of human nature which are assets to human society. If the personnel of operating employees can be made up of good men by careful selection and training, then safe and economical operation of the railroad will follow naturally.

"The responsibility for the safe and economical operation of a sub-division, while engaging the attention of everyone in the department, rests more particularly upon the trainmaster, who in turn is responsible to the superintendent. The organization to be handled consists of men and material, but supervision and leadership of the men is 95 per cent of the job for the simple reason that men are 95 per cent or more, in relative importance, of any organization. The first thing, then, for a trainmaster to realize, is that he must develop those assets of character and habits of mind in his men which make for good citizenship. When he has gotten as near the ideal as his ability permits, he will have builded a solid foundation on which to construct a safe, honest, and efficient organization.

"Safety is that habit of mind that causes a man to 'do it in the right way.' Safety in mental habit is the first consideration in operating a railroad successfully and is second to nothing in importance. It will not avail to talk about efficiency or economy unless safety of operation is realized, or as nearly realized as is possible with any particular organization. In my opinion, the general managers and other executive officers should be, and they are, just as interested in injuries per 1,000 man-hours as they are in cost per 1,000 gross ton-miles. There is likely to be a very definite relation between the two. We are put here to add to human happiness, and unless we do it collectively and individually, we have failed in our mission on this earth.

"The trainmaster must know that the public at large, and the employees of his company as well, have a very keen interest in the operation of the railroad, certainly to the extent of assuming that everything practicable will be done to reduce the dangers which necessarily surround the operation of trains. He must assume the responsibility of meeting this duty because he cannot escape it if he would, nor should he desire to do so if he could. A transportation officer charged with safety of train operation has a very responsible position, and with it great opportunity for constructive service to the public."

Road Foreman and Safety

W. C. Bennett, road foreman of engines of the Chicago & North Western, in speaking on "The Road Foreman and Safety," divided the subject into five parts: (1) The road foreman's opportunity to observe conditions that may be hazardous and result in an accident; (2) the education of employees in the principle of safety; (3) effective versus passive supervision in a program for safety; (4) application of automatic safety devices; and (5) safety or accident prevention as an economic issue and good business. Under the first subject he included suggestions as to how the road foreman can make the most of opportunities that are presented. He should be vigilant in observation and should constantly check up how all the men do their work. When riding engines he should observe that the enginemen properly sound the locomotive whistle and that the bell is ringing so as to warn of danger. When inspecting outside points that are under his supervision he should immediately correct any hazardous condition. He should note if it is in his power to do so.

"Education for safety," he said, "is accidents' greatest and most powerful enemy. Every employee must be thoroughly conversant with rules and regulations pertaining to safety. It is of vast importance that we educate our men in the study

of conditions that might be hazardous. There is a solution for every dangerous condition. Most accidents could have been prevented if the hazards had been thoroughly understood. The employees should be taught that safety is good business. They should have a full understanding of the absolute necessity of complying with the rules and regulations pertaining to safety. In the education of employees there should be no failure to consider the untrained and unskilled men who are entering the service.

"Passive supervision will not fill the requirements of today in the program for safety any more than it would be adequate for other matters needing supervision. The careless and indifferent supervisor has no place in our industrial fields. Effective and intelligent supervision is a prime factor in safety. Workmen demonstrate greater efficiency under the intelligent and sympathetic supervisor than under the autocratic and domineering type. It is well recognized that the efficiency of an employee is greatly reduced by constant intereference on the part of an autocratic overseer. Supervisors should educate themselves along the lines of observation, as that is a great asset, not only in accident prevention but in the performance of their duties."

Master Mechanics Must Promote Safety

According to Harry W. Maxwell, master mechanic of the Boston division of the New York, New Haven & Hartford, the master mechanic must take a personal and sustained interest in the matter of order and neatness about the plant.

"He must know what is happening in the way of personal injuries to members of his organization and what are the immediate circumstances that are involved. He must, whenever possible, make a personal investigation of the conditions surrounding even minor injuries and on occasions point out how the responsibility for the accidents should be measured and just where it lies. He must see that efficient means are provided for publicity and stimulate the interest of the men themselves in carrying out a definite program. He must see that his organization is being trained to recognize dangerous methods of work and correct them before they bear fruit.

"As a means of supplementing the work of the safety committee at the Dover street enginehouse, men injured during the previous week were ordered to attend the weekly safety meeting and explain to the committee the manner in which they were injured. Two good results were obtained from this method. On the one hand, a man was told how he could have avoided his injury. On the other hand, through the publicity caused by the word going from mouth to mouth as to why the man was called into the office, the rest of the men began to talk safety and decided that they would not be called into the office for being careless if they could avoid it by giving more thought to safety.

"There have been occasions at different times when a foreman was called in the weekly meetings as, for instance, when the case was investigated with the injured man and it developed that the foreman may have been lax in his duties and had not explained to the man the danger of the work he was performing. This caused the foreman to point out when the work was given out, and how the job could be done safely. Good results followed this practice too, as the foremen were like the men in not wanting to be called into the office.

"Numerous signs are used at this point to insure safety. A portable sign, which is called 'the dirty sign' is placed in a section which the master mechanic and general foreman decide is not properly kept up. As this is rather humiliating for the foreman who is responsible for this particular section, we have only had to use this sign twice since the plan was started about a year ago."

President Calles Gets New Train

Five-car Pullman train for Mexico luxuriously furnished without sacrificing practicability

WHAT is said to be the most luxurious and at the same time the most serviceable train ever produced by the Pullman Car and Manufacturing Corporation, was turned over to representatives of President Calles of the Republic of Mexico at the Dearborn station, Chicago, on April 25. The train of five cars, in all its tapestries and furniture closely follows the decorations and furnishings of the Palace of Chapultepec near Mexico City, Mex.

The train was opened to the public for inspection during the day and was moved over the Wabash from Chicago to St. Louis in charge of Arturo Elias, consul-general and fiscal agent for Mexico. It was scheduled to move over the Missouri-Kansas-Texas to San Antonio, Tex., and thence over the International-Great Northern to Laredo, Tex., where it is to be delivered to the National of Mexico for movement to Mexico City. The public was also invited to view the train at St. Louis, Mo., San Antonio, Dallas and Laredo, Tex., at Monterey, Mex., and at Colonia station, Mexico City, on

The Audience and Reception Room in the President's Car

The Presidential Smoking Room

May 1, where it will be met by President Calles. A private car for the Mexican secretary of war, constructed by the same company, was attached to the train on the trip from Chicago.

The presidential train is made up of the president's car, a dining and smoking car, a staff car, an escort car for the military guard and an automobile car. It will replace the presidential train now in use which has been in service since 1897.

The interior decorations and furnishings are correctly Mexican in tone and design, the result of a study in

The Dining Room of the Presidential Train

Mexico City by the manufacturer's artist. All tapestries, carpets, curtains and drapes were woven from designs and in colors that represent Mexican art from Aztec days to the present time. The carving of the furniture is in the Mexican motif. Hardware in the president's car is gold plated, silver finish being used on the other cars. The exterior of the train is painted in Mexican green with the national emblem placed upon each side of every car.

The president's car, which it is planned to carry at the end of the train, uses a large observation platform as an entrance to an audience and reception room. The elliptical vaulted ceiling of this room is in light old plaster tone with decorations in gold and green. The walls have the same coloring with the window frames and doors are of hand-carved walnut. The furniture consists of a table, couch and ten lounge chairs. Upholstering and window drapes are in Mexican old red and green, and hanging on the wall at one end of the room is a tapestry showing the Mexican national emblem on a field of green ornamented with Aztec patterns. The floor of this room is laid in alternate squares of black and dull ecru tile effect, partially covered by a hand-woven rug with a black field ornamented in green, red and walnut tones. Lighting fixtures are of the candelabra type.

Beyond the audience room in the president's car is the president's office, which is panelled in walnut, decorated in Aztec fashion and fitted with walnut furniture. Farther along the car are two bedrooms, each with connecting bath, and furnished with house-type beds, dresser, side table, chair and wardrobe. Coverlets on the beds are of figured antique velvet brocade. A private room containing a standard Pullman section and similarly decorated adjoin the presidential suite.

The smoking and dining car contains a large smoking room of decorative style in harmony with the reception parlor of the president's car, a room with Pullman section and lavatory and a dining salon. The dining room is fitted with a long table in the banquet style, capable of seating fourteen, and made up of two telescoping tables. At each end of the room is a sideboard and a chest for silver. The chests have hasps, hinges and locks of ancient Mexican design and rest on carved trestles. Each piece of silver bears the Mexican emblem in bas relief. Furniture in this room is hand-carved walnut, upholstered in royal blue morocco, handtooled in Mexican design. At the opposite end of the car is the serving pantry and completely equipped kitchen.

The third car in the train, the staff car, contains one large bedroom with house-type bed, seven rooms with upper and lower berths, two lavatories and a bathroom. The elaborate scheme of decoration carried out in the two presidential cars is found in the blue, gold and ecru tinting in the staff car.

The escort car, designed to provide accommodations for the military guard, as well as for the attendants and crew of the train, contains 10 Pullman sections, toilet rooms, shower bath and kitchen and baggage room. The finish of this car is in brown mahogany.

The automobile car is intended primarily to transport automobiles although some space is provided here for baggage and supplies. The rear end of the car can be opened to the full height and width by means of two hinged doors. Entrance to the car for automobiles can also be effected by sliding doors on each side. A block and tackle with steel cables is provided to hoist the auto-

The Presidential Bed Room

mobiles into the car when loading platforms are not available.

The private car for the Mexican secretary of war, designed in much the same fashion as the presidential car, is made up of a reception and audience room, a dining room, bedrooms and compartments, and a kitchen.

THE READING and the Central of New Jersey on April 24 restored "every hour on the hour" service between New York and Philadelphia on their joint route. A service approximating this has been given in the past, but there were a few intervals of two hours between trains. These long intervals have now been eliminated so that hourly service is complete between 6 a. m. and 5 p. m. standard time. The running time varies from two hours to 2 hours 8 min., including the ferry trip at the New York end. For all the trains in this service the two roads have provided entirely new equipment of modern design and decoration—coaches, parlor cars and café-club cars.

Manufacturing by Carriers Tabooed by Purchase Head

THE practice of railroads of sorting their scrap before sale found a strong advocate, and manufacturing by carriers, a vigorous opponent, at a meeting of the Cleveland Steam Railway Club at Cleveland, Ohio, on April 4 in M. E. Towner, general purchasing agent, Western Maryland, during an address before the club on Car Department Progress. It is no secret, Mr. Towner gave the audience to understand, that much manufacturing is being done on railroads whether called manufacturing or not. There was a lot of it in years past and its volume was multiplied following the war. It has many friends on the properties, but however well founded such practices may have appeared at the outset, experience has all too frequently disclosed that in the long run it is the exception rather than the rule where manufacturing by the railroads can justify itself. In the present era as never before, contended the speaker, it should be recognized that manufacturing is one enterprise and transportation is another and with the ever increasing demands by owners and the public for better and cheaper transportation, it is a wise management that looks carefully and figures closely before getting too badly entangled with such enterprises.

Should Sort Scrap

Reclamation, embracing the conservation of material and its repair and the handling and disposing of discarded material, unlike manufacturing, said Mr. Towner, are distinctly within the province of a railroad and constitute a field of work which railroads can well afford to give more study. In this connection the speaker proved a strong contender for the principle of sorting scrap before sale, declaring the easy practice of selling scrap mixed is usually a source of losses to a railroad which would hardly be tolerated if fully realized. It was emphasized, however, that the extent and methods of handling this scrap are important. The question—should each car repair point handle all of its own reclamation and do all of its own preparing and assorting of scrap for the market, to a large extent, he said, must be answered in the negative. Reclamation means the assembling and using of perfectly good articles which might otherwise be lost; the repairing of units or items which are only in part worn out, and the making use of other units or items of material which can be no longer used for their original purpose. Where any point has the quantity and facilities, and can with speed and economy do this reclaiming, it is unnecessary and impracticable to send the material a considerable distance and have it returned.

Trained Men to Handle It

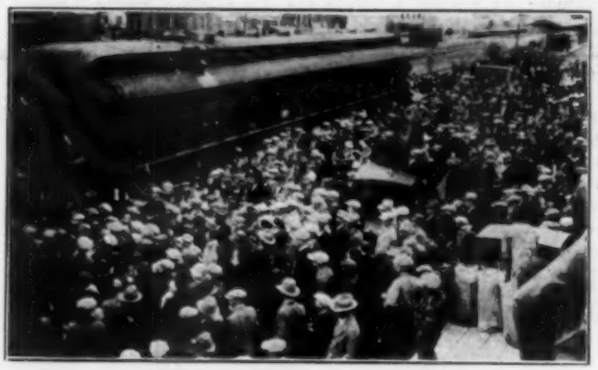
In general, scrap should be assembled at one or more points and handled by men whose training and business it is to prepare this non-usable material for the market. If you look at a pile of scrap as dollars and cents, you will find, relatively speaking, with the 64 to 80 different classes produced on any railroad, the items represented by pennies, nickels, dimes, quarters, half dollars and dollars. To mix this money all up and sell at an average price is uneconomical. There was a time when this was common practice, but it has been proven beyond question that a railroad which ultimately gets the highest value for its scrap prepares it to meet the customers' needs. There is no excuse for a railroad not knowing what the market is and where it is. It is true that every time a piece of material is handled, it costs money, but a railroad need not handle many times, especially considering the modern facilities available for picking up scrap and loading the same and delivering it to common point for unloading, assorting and marketing. One of the principal points, however, to be considered, is the non-diversion of man power from the car department's natural work of repairing cars, and the use of care not to build up of a number of organizations which handle and assort scrap when one, properly equipped, can handle the entire tonnage with much less man hour effort and with greater economy.

The meeting was unique in the considerable number of railway purchasing and stores officers present.

"Agricultural College on Wheels"

OVER 71,400 farmers and other people from rural districts and business men visited the "Illinois Central Agricultural College on Wheels" which this company operated over 1,716 miles on its Vicksburg Route and Tennessee and Kentucky divisions from January 15 to February 4. This number attended in spite of the fact that the highways were almost impassable and the weather was rainy and inclement most of the time throughout the trip.

At Shreveport, La., 15 banking and business interests ran a full-page advertisement in two of the daily news-



A Crowd Waiting at Ruston, La.

papers inviting the farmers to attend the demonstration. The train made 80 scheduled and 3 extra (requested) stops. The largest attendance for any one day was 8,000 on January 26 when stops were made at Dyersburg, Tenn., Halls, Ripley, and Covington. At Dyersburg 4,000 people visited the train.

The object of operating the "Agricultural College on Wheels" was to help the farmer see the soundness of a better balanced system of farming and to show him how much more profitable it would be than to gamble on one crop of any kind. To carry out this program five cars were used for exhibits and another for motion pictures and lectures. There were exhibits on pastures, forage crops, vegetable and fruit growing, methods of cultivation, fertilization, pruning and spraying, pests and the proper treatment for them, proper packing and standardization for marketing. One car contained poultry, sheep and livestock exhibits and another a dairy herd exhibit and balanced ration for feeding. Another exhibit demonstrated the importance of pure bred sires at the head of all flocks and herds.

Communications and Books

[*The* RAILWAY AGE *welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.*]

Suggested Co-ordination of Air Service and Railroad

CHICAGO.

TO THE EDITOR:

I would like to interest railway executives in the potentialities attendant on the proper co-ordination of railroad and air service. As an illustration of such advantageous co-operation may I present for consideration an outline of a new passenger and express air route, i. e., New York City to Rochester, New York? This line should have large possibilities not only because of the traffic between the terminal points, but also as a means of reducing the present time of travel between New York and Chicago.

A direct passenger air line between these two latter cities has often been suggested, but until the development of large airplanes equipped with sleeping accommodations and a very material reduction in rates, such a through route will remain impractical. However, the use of high speed airplanes in conjunction with the present train service offers interesting possibilities.

Under its present schedule the Twentieth Century Limited, while leaving New York at 2:45 p. m. does not arrive in Rochester until 10:25 p. m., and elapsed time of seven hours and forty minutes. This is due to the fact that the line is indirect, first running due north 142 miles to Albany before it turns west in the direction of Rochester. In other words, the train must cover a distance of 370 miles in reaching a point only 250 miles by air. The 250-mile air line is via Port Jervis, Binghamton and Ithaca, and assuming a flying speed of 125 miles an hour, can be covered theoretically in two hours. The following tentative schedule has therefore, been evolved:

	Hours	Minutes
New York City to aviation field	0	45
Flying time	2	00
Aviation field to Rochester station	0	30
Time allowance for lost distance, headwinds, etc.	1	00
Total	4	15

This indicates that a passenger by airplane and train could leave New York at 6:10 p. m., catch the Twentieth Century Limited leaving Rochester at 10:25 p. m. and arrive in Chicago at 9:45 the next morning. The same airplanes could be used for express shipments, with the result that packages received after the close of business would be delivered in the loop district in Chicago not later than 10:30 the next morning and at a cost very much less than if handled by the proposed direct New York-Chicago express planes.

On the return trip a passenger could leave Buffalo by train at 7 a. m., have a comfortable breakfast, get to Rochester at 8:25 and arrive in New York City at 12:45 p. m., while it would take until 5 p. m. to come all the way by train.

At the present time it is a bit difficult to figure passenger fares for this service, as there are so many different bases of schedules and they would depend upon the relative amount of mail and express carried. However, in the long run I believe such a route could be made to show dividends and yet be operated at rates that would make it attractive to businessmen whose time was of great value.

Of course, the above plan presupposes an airport not over forty-five minutes from the downtown business district and while non-existent at the present time, it must come in the near future if New York City is going to achieve its rightful place in air transport development. I visualize a field in the vicinity of Newark, New Jersey, in view of the rapid transportation afforded by the Hudson-Manhattan tunnels. By using this line with motor bus connection from the Manhattan transfer, or other equivalent station, it would be quite easy to reach this airport within the forty-five minute limit.

F. DESMOND SPRAGUE.

Keep the Work Train Busy

HAILEYVILLE, Okla.

To the Editor:

The editorial in the issue of April 16 on the above subject touches on one of the most important matters in connection with the upkeep of a railroad. A large part of the train dispatchers do not seem to realize the cost of a work train each hour that it is out on the road. Those who have not had the actual experience of spending much time with work trains, while they are doing the work, will never realize just what the expenditure is. The performance of work trains can be expedited by giving them more authority to move within certain limits against other trains. When such a train is working over a territory of say seven or eight miles it can clear trains from either direction, after they show up, within 15 and 20 min. and many times less.

More restrictions should be placed against the trains moving through a work train's territory than against the work train itself. There are two brakemen on work trains who have nothing to do but to flag and if they will flag in the right manner there will be little or no excuse for stopping through trains within the work train's limits. Limited restrictions should also be placed against local passenger trains through such limits because the work train can clear a passenger train just as quickly as it can a freight train.

When a train dispatcher gives a work train its orders at 6 a. m. it is not reasonable to presume that he will be able to give this train latitude enough to permit it to work all day without its being delayed for the lack of "time" on opposing trains. A passenger train may fall down an hour or two and it may be impossible to get the "time" to the work train, whereas if the work train was allowed, under certain conditions, to work until this train showed up, it can readily be seen of what advantage it would be to the work train. Where there is only one main track and two trains try to use the same territory at the same time one or the other is usually going to suffer a delay. The question is whether it will be cheaper to delay a through train 10 or 15 minutes or a work train with 50 or 60 men an hour or two. One of the solutions of the work train problem is to give the work train a little better than an even break with other trains over the work train's territory and stop criticizing the train dispatcher or the train crew if other trains are delayed a few minutes while the work train is clearing them.

J. L. COSS,
Train Dispatcher, Chicago, Rock Island & Pacific.

New Books

History of the Eleventh Engineers U. S. A. Published by the Trustees Eleventh Engineers' Fund, New York. Bound in cloth, 539 pages, 5 in. by 8 in.; illustrated.

This book is a history of the organization, training, overseas work and final demobilization in May, 1919, of the first regiment of U. S. Railway Engineers to reach France. Organized in New York City in May, 1917, this regiment saw service with the British Expeditionary Force from August, 1917, to January, 1918, and again from April until June of the latter year, then becoming a part of the American Lines of Communication and engaged on reconstruction work after the Armistice. All kinds of operations from laying rails, strengthening bridges and running

trains to digging trenches were undertaken, and the regiment is credited with participation in seven major engagements.

Part I of the book is devoted to a narrative of happenings in chronological order.

Part II outlines the military engineering and construction work in some detail.

The entire book will be of much general interest to railroad men and to those who were in any branch of the U. S. army or serving either at home or in the American Expeditionary Forces, it will bring back a flood of memories long since supposedly forgotten. The text of this book in conjunction with the excellent illustrations, soldier-drawn cartoons and army maps make the book a valuable record of the service of U. S. railway engineers in the World War.

The book has been published in a limited edition and will not be put on general sale, but a few extra copies have been printed which will be available for libraries or for persons especially interested in such historical matter.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Capital Structure Chart American Railroads Excluding Switching Companies Covering Every Individual Line With An Income Over $1,000,000 *Annually from Sworn Reports Filed With the Interstate Commerce Commission.* Large Chart, numbered Form 302. Pub. by Pacific Statistics, Los Angeles, Calif., $3.

Consolidated Southwestern Cases. Decision by Interstate Commerce Commission, including much information on routes and commodities in the section concerned. Cited as 123 I. C. C. 203. Dated April 5, 1927. Pub. by Govt. Print. Off., Washington, D. C., 45 cents.

Reliability and Adequacy of Farm-Price Data, by Charles F. Sarle. What data there are on farm-prices, and their usefulness. U. S. Dept. of Agriculture Department Bulletin No. 1480. 65 p. Pub. by Govt. Print. Office, Washington, D. C., 15 cents.

Thirty-Ninth Annual Report on the Statistics of Railways in the United States for the Year Ended December 31, 1925, prepared by the Bureau of Statistics, Interstate Commerce Commission. In other words, the 1925 I. C. C. Blue Book is now available, 275 p. Pub. by Govt. Print. Off., Washington, D. C., $1.30.

Periodical Articles

Commercial Flying, by Capt. F. L. Barnard. The crudities of railroads of a century ago seem as amusing as the crudities of equipment, etc., of commercial air services of ten years ago, described in this article. Possibilities of competition with railroads are considered. Journal of the Institute of Transport, April, 1927, p. 300-305.

New Elements in American Business Efficiency, by C. S. Duncan. They include capital expenditures, mass production, new machinery, management, outside influences, and labor. Harvard Business Review, April, 1927, p. 269-280.

A New Legal Basis for Railroad Consolidation, by Prof. Wm. J. Cunningham. Where we are now, and why we can't exactly go on in the same way. Annalist, April 18, 1927, p. 531-533.

Railroads as a Field for Investment, by T. Clyde McCarroll. Some consideration of attractiveness in investment and how railroad securities measure up. Commerce Monthly, April, 1927, p. 3-11.

Valuing the Railroads. Significance of the O'Fallon Decision. New York Trust Company Index, April, 1927, p. 3-6.

[The RAILWAY AGE *does not publish anonymous communications. The name and address of the writer must be given in every case—not for publication, unless he desires it, but as an evidence of good faith.]*

Looking Backward

Fifty Years Ago

On April 27 the first through train of the Southern Pacific arrived at Ft. Yuma on the Colorado river, 715 miles from San Francisco, after crossing a sterile and unpeopled waste. From here the line, pushing almost due east across rugged, uninhabited Arizona, New Mexico and Texas, will meet the Texas & Pacific.—*Railway Age,* May 3, 1877.

It is probably not generally appreciated that the United States, with a population less than that of Germany, has more miles of railways than all seven of the powers—Russia, Turkey, Germany, Austria, Great Britain, France and Italy—now involved in the present European war. Our mileage is nearly 80,000 while the seven countries have a railway mileage of 76,620.—*Railway Age,* May 3, 1877.

No less than 11 lines from Selkirk have been surveyed through the Rocky and Cascade mountains in an effort to find a suitable route for the Canadian Pacific. During the past six years $3,136,000 have been expended in surveys and 34 surveyors have lost their lives. The greatest difficulties appear to lie between the Yellow Head Pass and the Pacific coast. What can the locomotive do in an arctic region where the mercury falls as low as 58 deg. below zero in midwinter?—*Railway Age,* May 3, 1877.

Twenty-Five Years Ago

In an effort to improve the lighting of passenger cars, the Pennsylvania has been experimenting with various systems of electric installation. All cars built this year will be equipped for electric lighting by the straight storage battery system.—*Railway Age,* May 2, 1902.

The Chicago, Rock Island & Pacific has purchased the St. Louis, Kansas City & Colorado, between St. Louis, Mo., and Union, and has obtained control of the Wiggins Ferry Company, thus providing for the Rock Island's entrance into St. Louis when the line is completed from Union to Kansas City.—*Railway and Engineering Review,* May 3, 1902.

Ten Years Ago

Edward J. Pearson, vice-president of the New York, New Haven & Hartford, has been elected president, succeeding Howard Elliott.—*Railway Review,* April 28, 1917.

The Interstate Commerce Commission has issued special permissive orders amending its tariff rules to authorize the railroads to file blanket supplements to existing rate schedules proposing general increases in rates of 15 per cent.—*Railway Age Gazette,* April 27, 1917.

The railroads in the United States have caught the garden fever. Many have announced to their employees that they can use unoccupied land belonging to the railway for cultivating food crops this summer. The Lackawanna has offered farm bureaus along its lines 25 per cent of its section laborers for two weeks in planting season. Twelve demonstration farms, comprising 1,763 acres, have been turned over for immediate use by the Nashville, Chattanooga & St. Louis—*Railway Review,* April 28, 1917.

The Interstate Commerce Commission has made a report on the Pere Marquette and the Cincinnati, Hamilton & Dayton, both of which are now operating under reorganization plans, in which it concludes that "unwise management contributed to the downfall of these roads, but breach of trust by corporate officials, often for personal gain, was the main cause here . . . . . Neither rivalry, nor rate level, nor regulation nor all combined, can be found on this record to have contributed in any appreciable degree to the disaster."—*Railway Age Gazette,* April 27, 1917.

Odds and Ends of Railroading

The following is one of the first of the safety epitaphs, but it is still good:

Here lies the body of William Jay,
Who died while protesting the right-of-way,
He was right, dead right, and he sped along,
But he's just as dead as if he'd been wrong.

A Railroad Floral Establishment

In the Great Northern greenhouse at Monroe, Wash., more than a thousand Easter lily plants were grown to provide decorations for Great Northern dining cars on Easter Sunday. In addition, many of the lilies were placed in Great Northern ticket offices, notably at St. Paul, Minneapolis, Chicago and other eastern and western cities on the system.

The growth of these lilies was minutely controlled to allow for the varied times that they had to be sent out to eastern and western points of the railway system to be in flower on April 17. This greenhouse provides floral decorations on the dining car tables of the "Oriental Limited" and other trains of the Great Northern. Carnations are forwarded at the rate of from 150 to 200 per day, and tulips about 300 a day, providing continual replenishment.

More Telephonic Nuisances

In this department in our issue of April 2, we published verses from the Southern Pacific Bulletin, the Missouri Pacific Magazine and the L. & N. Magazine on the subject of "Telephone Pests." The first of these journals anathematized the man whose query is "Who is ziss?." "Guess who?," was the M. P.'s pet hate, and "Well?" the unpopular greeting for the L. & N. We added the following dithyramb of our own:

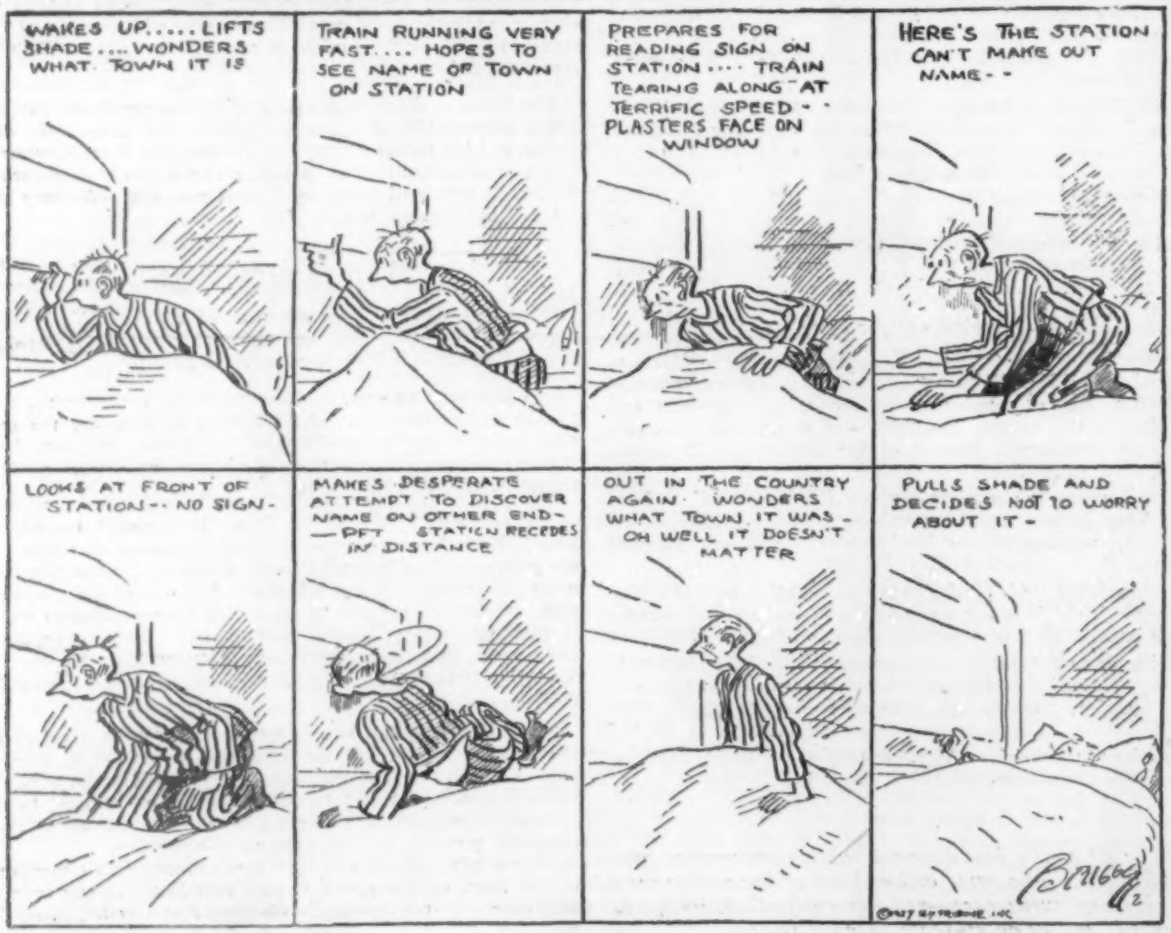
The pompous cuss annoys us most,
Conceited and full of swank
Who tells us, stiff as any post,
"You're talking to Mr. Blank."

Now A. R. MacLaren, of the Mississippi Central, writes "Finis" to the series with the following:

They all are bad, I will admit,
But there's one worse I guess,
The nutty bird is still at large
Who always answers "Yes?"

But, Oh! my friends, the radio 'phone,
Will make us tear our hair,
For the bloomin' silly London chaps
Say, "Hello; are you there?"

Movie of a Man in a Lower Trying to Discover the Name of Town By BRIGGS



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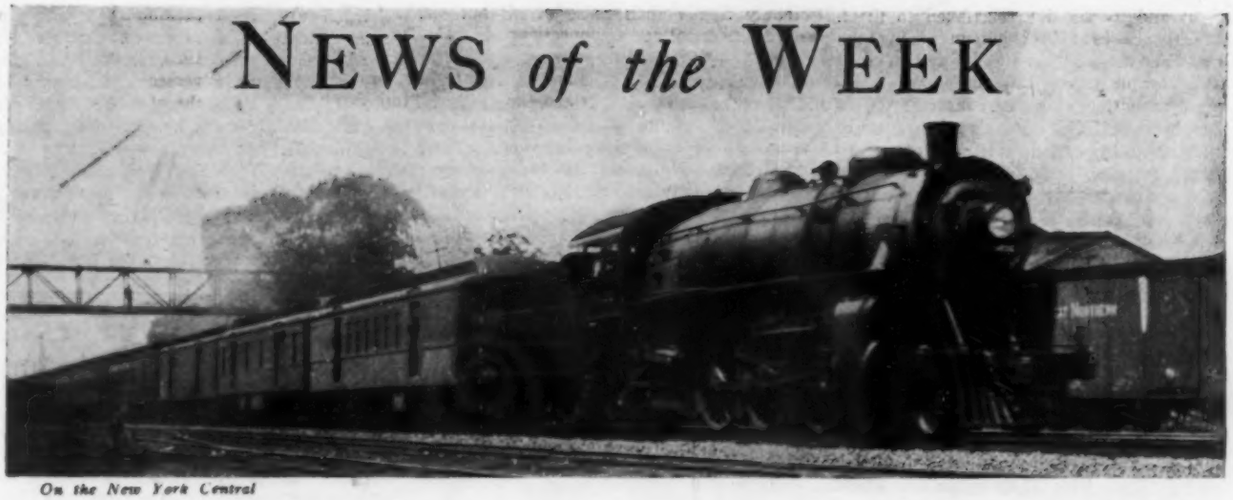
NEWS *of the* WEEK



On the New York Central

THE CANADIAN RAILWAY CLUB will hold its next meeting on May 10 at Montreal. This will be the annual meeting and officers will be elected.

THE PENNSYLVANIA announces that the installation of automatic train control on its main line between Camden, N. J., and Atlantic City has been completed.

A FIRE at the Allegheny shops of the Baltimore & Ohio at Pittsburgh, Pa., on April 26, damaged the blacksmith shop, saw mill and roundhouse; estimated total damage $100,000 or more.

THE CHICAGO & NORTH WESTERN, in conjunction with the Union Pacific, has re-equipped train No. 13, leaving Chicago at 10:30 a.m. for Denver, Colo., and will christen it "The Columbine" in honor of the state flower of Colorado; effective May 15.

THE INTERSTATE COMMERCE COMMISSION has assigned its railway mail pay proceeding, No. 9200, in which the railroads are seeking an increase in the rates for the transportation of the United States mails, for further hearing on July 5 at Atlantic City, N. J., before Examiner Mullen.

THE CAR FOREMEN'S ASSOCIATION of Chicago will hold its next meeting on May 9 at the Great Northern Hotel, when a paper will be read on "Handling of Inflammable Liquids in Tank Cars on the Track and in the Ditch," by Mr. Innes, of the Bureau of Explosives, Dallas, Tex.

A NEW AGREEMENT governing the working conditions of employes of the American Railway Express Company, effective on June 1, has been signed by committees representing the company and the American Federation of Express Workers, thereby settling a dispute which has been in existence since August, 1925. The settlement does not affect wages.

A TOTAL of 277 new industrial plants were established along the Illinois Central in 1926. These plants have furnished employment to 6,000 workmen and their receipts and shipments of freight are at the rate of 23,000 carloads a year. The number established in each state is: Mississippi 65; Illinois 58; Louisiana 28; Iowa 21; Tennessee 20; Kentucky 15; Nebraska 6; Alabama 5; Indiana 4; and Wisconsin 4.

IN THE UNITED STATES DISTRICT COURT at Philadelphia, on April 21, the government began suit to forfeit 660 barrels of alleged beer, seized in the yards of the Pennsylvania at Bridgeport, Pa., together with the two freight cars in which the beer was found. Heretofore, the government has seized liquor at various places in freight cars, but the present case is said to be the first in which the district attorney proposes to condemn not only the liquor and its containers but also the cars.

Memorial to E. H. Harriman

A brass tablet and bells were unveiled in the Union Pacific station at Boise, Idaho, on April 17, in honor of the late Edward H. Harriman, former president of the Union Pacific. The tablet bears the inscription: "The bells in this tower were given by a friend in honor of Edward Henry Harriman. Of all the great builders, the famous doers of things in this busy world, none more ably and manfully did his appointed work." The four bells of the Harriman chimes are placed in the station tower and weigh 4,500 pounds.

St. Paul Rates Operating Divisions

The Kansas City division of the Chicago, Milwaukee & St. Paul headed the list of divisions in operating efficiency last year, having held first place in six months of the twelve, in accordance with the plan inaugurated seven years ago under which the divisions are rated each month in various operations. The Hastings and Dakota division ranked second with four months, and the Aberdeen division third. The operations on which the divisions are rated include perfect passenger train performance, for which 15 points are allowed; perfect freight train performance, 15 points; increased mileage per freight car per day, 10 points; no train accidents, 10 points; and improvements in train loading, overtime, cost of switching, cost of handling coal, etc., 50 points.

Eastern Roads May Consider Enginemen's Wages Regionally

It was indicated that the wage increase of from 15 to 25 per cent sought by the Brotherhood of Locomotive Engineers for its members employed on eastern railroads would be negotiated regionally if roads in the east concurred in the plan now under way. A committee of railroad managers has been appointed by the president's conference to handle negotiations, and inquiries have been sent out to the different Eastern railroads to determine their attitude in the matter of negotiating the wage demand by regions. The committee of managers consists of: J. G. Walber of the New York Central; G. W. Galloway of the Baltimore & Ohio; R. V. Massey of the Pennsylvania; J. A. Droege of the New York, New Haven & Hartford; C. H. Ewing of the Reading, and C. E. Denney of the Nickel Plate. The only change in this committee from that which represented the railroads of the East in connection with the wage increase demands of trainmen, conductors and firemen is the presence of Mr. Droege, who replaces B. H. Pollock, formerly vice-president, in charge of operation, of the Boston & Maine.

Great Northern Operates Instruction Train

The Great Northern is operating a special train over the system to instruct employees. The train consists of an air brake car, a signal car, a lecture car, a business car and an observation car. Chairs set between the rows of machines accommodate 30 men to a class.

In the signal car C. A. Dunham, superintendent of signals, gives lectures on the signal system to classes of 50 men at a time. In this car, which is equipped with charts and diagrams, the rules examining board, in intervals between classes, examines trainmen and enginemen.

A motion picture and lecture room is in charge of C. L. LaFontaine, general safety supervisor. In this car classes of trainmen, enginemen and shopmen study safety appliances and are given demonstrations of the results of carelessness to them-

selves and to the lives entrusted to them. Classes are held in this car during the day, and in the evening groups of men come for instruction and for entertainment, with their families. In addition to the educational film the evening groups are entertained by moving pictures of scenes along the line and in Glacier National Park, to the accompaniment of music over the radio.

Space Applications for A. E. R. A. Show Ready

On May 16, applications for show space at the Cleveland Convention, will be mailed to all members of the A.E.R.A.

Thirty days are allowed for filing. All applications received up to the close of business June 15, will be awarded space by the exhibit committee which is scheduled to meet June 22 to make the official allotment. If any space remains unsold after the initial allotment has been made, it will be assigned by the director of exhibits, in the order in which applications are received. This is the 46th annual gathering of the association. The convention dates are October 3-7, inclusive.

"Save the Forests!"

W. H. Kilby, chief of forest protection of the Canadian National Rys., reports that for the year 1926, the aggregate losses by fire on the National lines amounted only to $13,592 or an average of 64 cents per mile of track. The territory burned over aggregated 6,041 acres. The total losses are somewhat smaller than the year before. The company maintains fire patrols at numerous points, and fire guards are plowed along 4,000 miles of the lines each year. The fire guards average 8 feet in width.

In the week ended April 30, officers of the railways took part in "save the forest week," making talks over the radio and addressing the public through the newspapers.

The Canadian National lines use about $11,000,000 worth of timber and forest products yearly. The company's interest in reasonable prices for these supplies would be a sufficient incentive for all practicable activities looking to the prevention of fires; but in addition, it is to be noted that about 20 per cent of the freight tonnage transported by the National Railways is furnished by the forests. The aggregate shipments in 1926 amounted to over 12,000,000 tons. About one-twelfth of this total consisted of paper and books and another twelfth consisted of wood pulp.

Another Advance in B. & M. Wages

A wage increase of 5½ percent to crossing tenders, drawbridge tenders, lampmen and pumpmen of the Boston & Maine was awarded on April 26 by majority decision of an arbitration board. About 950 employes are affected.

Benjamin Thomas, representing the railroad, made a minority report, dissenting from the award on the ground that it was not in accordance with the evidence; and that the Boston & Maine rates were already higher than those of all but one of its connections.

The majority decree, signed by Victor S. Clark and P. J. Clair, announces the award as the result of "full hearing and consideration," but makes no statement of reasons. It stipulates that the increase shall continue in force for one year.

The minority report by Mr. Thomas says: "The evidence conclusively showed that the cost of living has not increased since the last change in wages of this class of employees. I cannot escape the conclusion that this award is very largely the result of recent wage increases to other classes of employees rather than an exclusive consideration of the evidence presented. The further conclusion seems inevitable that the application of arbitration under the present railway labor act is being regarded as synonymous with compromise."

Freight Traffic in February

Freight traffic for February, according to reports filed with the Bureau of Railway Economics, amounted to 37,250,265,000 net ton-miles, which exceeded by 1,269,317,000 net ton-miles, or 3.5 per cent, the best previous record for any February, which was established in 1924. It also exceeded by 1,845,559,000 net ton miles that for February, 1926.

In the Eastern district there was an increase of 5.2 per cent, in the Southern a decrease of 1.2 per cent, and in the Western an increase of 8.3 per cent.

Freight traffic for the first two months this year amounted to 76,470,740,000 net ton-miles, the greatest ever reported for that period in the history of the railroads. This was an increase of 3,390,397,000 ton-miles or 4.6 per cent over the best previous record, established in 1926.

The average daily movement per freight car in February was 30.4 miles, the highest average for that month ever attained. This was an increase of 1.8 miles above the average for February last year and of 3.5 miles above February, 1925.

The average load per car in February was 28 tons, a slight increase compared with February, 1926, 1925 and 1924, but a decrease compared with the four years preceding.

Short Lines Ask Re-hearing on Deficit Status

The Bingham & Garfield, the Ray & Gila Valley and the Nevada Northern have petitioned the Interstate Commerce Commission for a re-opening of Finance Dockets Nos. 2500, 2501 and 2502, in which the commission dismissed the claims of these roads for reimbursement of deficits sustained during the period of federal control after they had been relinquished by the Railroad Administration, under section 204 of the transportation act.

The petition says that the commission on February 9, 1922, and later dates, construed the statute to apply to a "deficit" as meaning a deficiency or decrease in income under private operation in the federal control period as compared with the average income for the corresponding portions of the test period preceding federal control. On this basis, these roads and others, the petition says, filed claims aggregating about four million dollars, but on October 17, 1925, the commission overruled and reversed its previous decisions and dismissed the claims of petitioners, holding that the word "deficit" should be given its ordinary significance. It is stated that this was done without according petitioners a hearing and that the commission's "conflicting decisions have destroyed the effect of each other, so that neither can be said to constitute the law even for the commission itself."

Safety Section Program for May

The committee on education of the Safety Section, A. R. A., announces, as the specialized work which it is recommended that the railroads carry on in the month of May, the broadcasting as widely as possible of the notice of prizes for pupils in schools which the American Railway Association is offering for the popularizing of the slogan "Cross Crossings Cautiously." L. G. Bentley, chairman, in his circular to the railroads (which is intended to be distributed among teachers and pupils of the public, parochial and private schools) asks all persons interested, during the month of May, to seek to keep the following suggestions constantly before people who drive automobiles:

1. Learn to recognize highway railroad crossings upon approaching them.
2. Approach all crossings prepared to stop if necessary. Stop if the law requires.
3. Recognize your responsibility for the safety of those in your car.
4. Remember that there is *just one person* who can positively prevent every crossing accident—*the driver of the automobile.*
5. Remember—Life is precious, particularly to the young, who have a right to expect many years of enjoyment and usefulness. Life is too precious to be lost as a penalty for hurry or hunger for thrills.
6. Remember that boys and girls should keep away from railroad tracks and refrain from hopping on or off moving trains.

Baltimore & Ohio to Celebrate for Two Weeks

The outdoor centennial celebration which the Baltimore & Ohio is preparing for the autumn, is to be spread over two weeks, from Saturday, September 24 to Saturday, October 8; and a tract of land, 1,000 acres in extent, belonging to the company in the southwestern part of Baltimore, is to be devoted to the festivities.

This large tract is close to the railroad and to the Baltimore-Washington highway, and there is to be a loop track over a mile long. There will be a grandstand seating over 12,000 persons, and there are to be numerous replicas of historic buildings, among which will be one of Mount Clare station.

A "World's Fair in Transportation" is the term used to describe this exposition and there will be a "hall of transportation," displaying innumerable exhibits of a character similar to what was seen in connection with the displays made by the Baltimore & Ohio (and other interests) at Philadelphia in 1876, at Chicago in 1893, and at St. Louis in 1903.

Parking space for 3,000 automobiles will be available. Everybody is invited and there will be no admission charge. Locomotives and other features will be shown out of doors and it is planned to have a mobile and articulated panorama three miles long, with many of the units of the pageant moving under their own power.

Western Trainmen's Wage Case

Eighteen shipping associations opposed wage increases for conductors and trainmen on western railroads in a letter addressed to the presidents of the roads when hearings before the United States Board of Mediation on the application of the Order of Railroad Conductors and the Brotherhood of Railroad Trainmen for increases in wages were started at Chicago on April 27. The letter said:

"The economic situation throughout the Middle West calls for a lowering of costs. It is manifest that an advance in your wages will place the western carriers in a more precarious position and at the same time an advance in wages if passed on to the public through advanced rates will be disastrous to the public.

"We therefore hope you will use every effort to prevent an advance as we will be obliged to oppose any requests by the carriers for freight rate advances as the result of these hearings at this time."

L. E. Sheppard, president of the Order of Railway Conductors, presented the employees' side of the case. H. A. Scandrett, vice-president of the Union Pacific and counsel for the railroads, said the companies could not agree to an increase because of the loss of revenue due to declining passenger traffic and lowered freight rates. He compared present wage scales with those of 1920 and showed that the present scales are only 5 per cent below the peak level reached in 1920. The present wage scales in other industries, he said, on the average are more than five per cent below the peak levels. In contrast he showed that freight rates of the western roads are now approximately 20 per cent below their peak. According to Mr. Scandrett, the carriers will not submit any issues regarding the ability, efficiency and loyalty of the men who are asking an increase, but will show that the existing rates of pay are fair and adequate to the men and that no further wage increases in the West are justified.

Winners in Illinois Central Essay Contest

James J. Donohue, a student of Columbia University at Dubuque, Iowa, has been awarded the grand prize offered by the Illinois Central to the student in a college along its lines writing the best essay on "The Place of the Railroads in the Life of the American People." The Illinois Central awarded a prize of $50 to the student in each of thirty-nine colleges writing the best essay on this subject. The grand prize of $100 was awarded in addition for the best essay among the previously winning thirty-nine.

In awarding the grand prize honorable mention was also given to essays prepared by nine other students. It is an interesting fact that of the ten essays ranked first, five were written by young men and five by young women. Five of the leaders are from the northern and western groups of colleges, three from the central group and two from the southern group, which is very nearly in the same proportion as the numbers of the 321 essays originally submitted.

The Illinois Central has published and is distributing in pamphlet form the essay winning the grand prize and the nine others which received honorable mention. Those given honorable mention were written by the following:

Neal A. Stanford, Northwestern University, Evanston, Ill.
Florence H. Huffman, Iowa State Teachers' College, Cedar Rapids, Iowa.
Willard J. Scott, St. Louis University, St. Louis, Mo.
Nancy Sasser, University of Wisconsin, Madison, Wis.
Oscar L. Bates, Agricultural and Mechanical College, Mississippi.
Eleanor Hawes Murray, Coe College, Cedar Rapids, Iowa.
Jessie Francis Wallace, Ellsworth College, Iowa Falls, Iowa.
M. Marie Grover, Illinois State Normal University, Normal, Ill.
John MacLachlan, Millsaps College, Jackson, Miss.

The essays published show that those writing them had given much study and thought to their general theme, and for men and women so young had got an unusually grasp of the part played by railroad transportation in modern industry and society.

Southern Pacific Organizes Bus and Truck Subsidiary

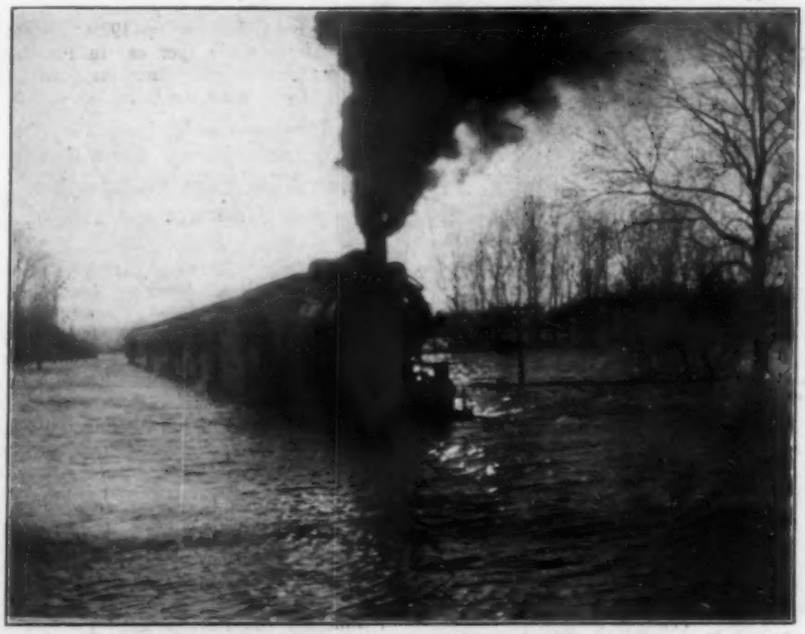
Operation of motor buses and trucks as auxiliaries to its railroad operations will soon be undertaken by the Southern Pacific. The entrance of this company into the field of highway transportation was made by the filing of articles of incorporation of the Southern Pacific Motor Transport Company, a California corporation, with the secretary of state. The object and purposes for which this corporation was formed, according to these articles, include the following: To hold, own, control, lease, purchase, sell, operate and manage the motor vehicles, motor buses and motor trucks on streets and highways within and outside of the state of California. San Francisco is given as the principal place of business, and the capital stock consists of 10,000 shares of no par value. The officers are not yet named.

Commenting on the organization of the Southern Pacific Motor Transport Company, Paul Shoup, executive vice-president of the Southern Pacific, made the following statement:

"The competition of privately owned machines and of motor bus companies, in connection with the construction of good highways in the territory served by this company, has so decreased the earnings from certain trains, especially those engaged in branch line service, as to necessitate taking off these trains.

"It is desirable wherever practicable that the gap thus created be filled by dependable motor bus service established upon the highway, more especially that connections with trains may be maintained. In many instances, this can be accomplished with the lesser operating costs of the motor bus compared with the train and the added support to be gained from the traffic adjacent to the highways traversed.

"For these reasons, the Southern Pacific Motor Transport Company has been organized, as a separate corporation with independent operation. This service will be developed as the need arises. The company will be empowered to engage in all forms of transportation, but for the time being its plans look only toward a passenger, baggage, mail and express service. . . ."



Near Hematite, Kentucky, December 30, 1926

Eastbound train No. 198 of the Louisville & Nashville—"The Pan-American Express"

Traffic

The Northern Pacific has established a new passenger office at Fifth avenue and Forty-Sixth street, New York City, and has purchased the building in which the office is situated.

The Chicago, Milwaukee & St. Paul on May 1 will sever its last connection with a consolidated ticket office, when it will move from the consolidated ticket office at Chicago to its own office at Clark and Monroe streets.

The Interstate Commerce Commission has assigned its railway mail pay proceeding, No. 9200, for hearing at Boston, Mass., on May 17, before Examiner Mullen, with respect to railway mail pay rates on the New England lines.

The largest class ever enrolled at the United States Forest Products Laboratory, Madison, Wis., assembled on April 18 to take the 29th short course in boxing and crating for industrial shippers. Although classes are usually limited to 20 men, unexpected demands increased the enrollment to 24.

The three Florida exposition trains ended their northern and western tours at the end of last week and reporting decided success at all points. It is estimated that 225,000 people, scattered through 15 states, passed through the exhibit cars. Local newspapers are credited with having done the exposition full and generous justice.

Hearings in connection with the Interstate Commerce Commission's investigation of rates on cottonseed and its products and related articles, Part 8 of its general rate structure investigation, No. 17,000, with which have been combined several other complaints, will begin at New York on May 23 before Examiners Money and Esch, according to a schedule announced by the commission. Further hearings will be held on May 31 at Minneapolis, June 6 at St. Louis, June 16 at Los Angeles, June 27 at Fort Worth and July 5 at New Orleans; and other hearings will be held in the early fall at Atlanta, Ga., Biloxi, Miss., and probably some point or points in the middle west.

The Interstate Commerce Commission on April 23 made public a proposed report by Attorney-Examiner John T. Money recommending that a proposed revision of rates on fresh meats and packing house products from points in southwestern territory to Kansas City, Mo., St. Louis, Mo., and Mississippi river crossings south thereof, and Chicago, Ill., and points beyond basing thereon, and from western trunk line points to points in the southwest be found not justified; but that the rates be canceled, without prejudice to establishing rates on bases set forth in the report. Rates on fresh meats and packing house products from western trunk line points to destinations in Oklahoma and Texas also would be found unreasonable.

The public service commission of New York has filed a petition with the Interstate Commerce Commission asking it to amend its order of November 13, 1920, in which it allowed railroads serving New York points to increase their intrastate milk and cream rates 20 per cent after the state commission had refused to allow such an increase, and to restore to the state commission jurisdiction to fix rates on milk and cream and similar products. The petition says that on or about April 2, 1925, the New York State Department of Farms and Markets and Dairymen's League Co-operative Association, Inc., filed a complaint with the public service commission against the rates charged by the railroads in intrastate commerce and the commission declined to pass upon it for lack of jurisdiction. Later a similar complaint was filed with the Interstate Commerce Commission, which declined to exercise jurisdiction. "Unless jurisdiction is exercised by the Interstate Commerce Commission," the petition says, "or restored to the public service commission, said rates will be fixed and frozen and not subject to regulation by any rate-making body."

Southwest Shippers' Advisory Board

The next meeting of the Southwest Shippers' Advisory Board will be held at Amarillo, Texas, on May 21. Considerable time will be given to reports and discussions of the various factors that have to do with this season's grain production and movement. Amarillo was chosen as the meeting place, as the date closely precedes the large annual grain movement from that territory and from Oklahoma; and in order that the grain men, as well as the local employees of the grain lines, might learn first-hand what the board does.

Reading and Jersey Central Improve New York-Philadelphia Service

The Reading and the Central of New Jersey on April 24 restored "every hour on the hour" service between New York and Philadelphia on their joint route. A service approximating this has been given in the past, but there were a few intervals of two hours between trains. These long intervals have now been eliminated so that hourly service is complete between 6 a. m. and 5 p. m. standard time. The running time varies from two hours to 2 hours 8 minutes, including the ferry trip at the New York end.

For all the trains in this service the two roads have provided entirely new equipment of modern design and decoration—coaches, parlor cars and café-club cars. In the café cars club breakfasts and luncheons and table d'hote dinners will be served.

Service Order Issued for Flood District

Because of the flood conditions in the Mississippi valley the Interstate Commerce Commission, Division 5, on April 23 issued Service Order No. 44, directing railroads to forward freight having origin or destination in, or ordinarily moving through, Arkansas, Louisiana, Missouri and Mississippi by the routes most available to expedite its movement and to prevent congestion, without regard to the routing made by shippers or carriers or to the ownership of the cars, and suspending car service rules that may conflict with these directions.

A Commuter Carried Free!

Henry W. Gaines, a lawyer, of Manhattan, New York City, residing in Huntington, L. I., today completes a period of 50 years and one month as a regular passenger on the Long Island Railroad; and General Passenger Agent, P. H. Woodward, acting on behalf of the company, has presented Mr. Gaines with a commutation ticket, gratis, for the month of May. Assuming that Mr. Gaines traveled six days a week, his journeys, 73 miles a day, have aggregated 1,144,348 miles, the equivalent of 45 trips around the world.

Mr. Gaines in a letter acknowledging the congratulations of the railroad company says:

"The mere fact that I could travel 70 miles a day on your trains for so long a period and not have a serious accident, nor as far as I can recall, a single passenger or trainman killed or injured, shows great care and foresight on the part of the management, and skill and efficiency on the part of your employees. You are also to be congratulated upon the high class of men in your employ, for during the many years I have always received the most kind and courteous treatment."

Freight Rate Hearings Adjourn

The hearings before Commissioner Frank McManamy and Assistant Chief Examiner W. H. Wagner of the Interstate Commerce Commission on the application of western carriers for a readjustment of class freight rates were adjourned at Kansas City, Mo., on April 25, Commissioner McManamy being suddenly called to Washington. The hearings will be resumed at Fargo, N. D., on May 11. The testimony of shippers and public service commissions occupied the last two days of the hearing. C. E. Childe, traffic manager of the Omaha Chamber of Commerce, advocated a uniform rate progression from any point east to Mississippi river points. He asked that the upward graduation of rates be reduced to 120 per cent of the scale existing in Central Freight Association territory. He said this would reduce the existing 83 per cent advantage of Mississippi river cities over Missouri river cities about 50 per cent and would place the latter on a fair competitive basis with the Mississippi group.

Hearings will be held at Fargo on May 11, Sioux Falls, S. D., on May 16, Omaha, Neb., on May 21, Lincoln on May 23, Denver, Colo., on June 1, and St. Paul,

Minn., on June 20. The date of the Chicago hearing is to be announced at St. Paul.

Lease of Warehouse Space Sustained

The Interstate Commerce Commission, Commissioners Eastman and McManamy dissenting, has rendered a decision that the action of the Pennsylvania in leasing to the Union Frujt Auction Company space in a warehouse in its produce yards at Pittsburgh, for the unloading, displaying and selling of carloads of fruit and vegetables arriving over its line, while refusing to accord like use of the same property to the Independent Fruit Auction Company, has not been shown to result in any violation of the interstate commerce act or other statute administered by the commission. Buyers and sellers of fruits and vegetables at Pittsburgh, mainly stockholders in the Independent company, had complained to the commission, asking it to prescribe regulations for the use of the facilities in the future.

The report, by Commissioner Woodlock, says that the warehouse property is the private property of the railroad and not a part of its transportation facilities devoted, or necessary to be devoted, to public use, and that the terms and conditions of the lease, including the annual rental of $10,000.08, are not shown to be so favorable as to amount to a refund or remission of any portion of the published freight rates.

Commissioner Eastman, in a dissenting opinion in which Commissioner McManamy joined, said that the case represents "in a new form the old, old story of special privilege" and that the premises in question are a part of the terminal facilities of the railroad; and the services there performed part of the transportation over which the commission has control.

Proposed Increases in Milk Rates Partially Allowed

An increase proposed by the railroads of approximately 20 per cent in the rates for the transportation of milk and cream between New England points and from points in New York to points in New England was found not justified, except as to distances less than 100 miles, in a decision made public by the Interstate Commerce Commission on April 25. The increase proposed, the report said, might ultimately result in a decrease in production, but for distances 100 miles and over rates equal to those now in effect under the distance scale of rates to New York City and Philadelphia, originally prescribed by the commission in another case, should be established. The suspended schedules were ordered cancelled without prejudice to the filing of new schedules in accordance with the views expressed. The commission expresses the opinion that milk and cream come within the class of products with which the Hoch-Smith resolution deals. The report concludes as follows:

"The gradual increase in other items of expense affecting milk production is an important factor to the dairy industry and it may reasonably be concluded that an increase in rail rates, even if not directly borne entirely by the producer, will have a serious effect upon the industry.

"The record leads to the conclusion that the dairying industry of New England is operating under depressed conditions. The increasing demands of the cities, coupled with the fact that the southern part of New England has largely withdrawn from commercial dairying, results in extension of the area of production that is being drawn upon. It now has crossed the Canadian line. Increased costs of production and decreasing number of heifers in New Hampshire and Vermont, do not afford a basis for favorable prediction as to the future of the industry there or in New England. It is one of the last remnants of agricultural pursuits in some sections of New England and the showing presented in this record justifies protestants' appeal for application of the Congressional declaration contained in the Hoch-Smith resolution that rates for the movement of agricultural commodities be reduced to the lowest lawful level consistent with the maintenance of adequate service.

Supreme Court Considers Highway's Benefits to Railroad

An assessment of $75,686 against the Missouri Pacific for the improvement of a public highway in Franklin county, Ark., practically paralleling the railroad and touching the same towns, was held, in a decision rendered by the Supreme Court of the United States on April 18, to be unreasonably discriminatory and "so excessive as to be a manifestly arbitrary exaction." The court ordered a modification of the decree of the lower court by the inclusion of a provision for a revision of the assessment not exceeding $15,000. The assessment was made by a road district and confirmed by the state legislature, as well as by the United States Circuit Court of Appeals for the Eighth Circuit. It was contested by the railroad both on the ground of discrimination in the apportionment of the assessment and on the question as to the extent of the "benefit" to it of a road to be used by competitive motor vehicles.

The opinion, by Justice Vandevanter, says that while the area of the railroad right of way in the district is eight-tenths of one per cent of the total, 13.2 per cent of the benefits was assessed to the railroad, on a mileage basis, whereas other property was assessed on an area basis. Personal property of the railroad was also included, as well as its real property.

Most of the testimony, the opinion says, was addressed to the question whether and how far the railroad would be benefited by the improvement of the parallel public road. On this point the court says: "From all the testimony we think there is ample ground for believing that the improved road will lead to an increase in the traffic and revenue of the railroad as respects freight moving in carload lots and passengers traveling considerable distances, but that the benefit from this will be cut down by a substantial loss in local freight and passenger traffic attracted to motor-driven vehicles moving over the improved road.

"That such a loss in local traffic usually ensues when hard-surface roads adapted to use by motor-driven vehicles are constructed practically parallel to railroads is not only shown by the testimony but is common knowledge. We think it also appears from the testimony that the increase in revenue reasonably to be expected will be greater than the loss, but that the excess will not be such as to justify an assessment of benefits of $75,686, or more than a small fraction of that sum."

C. P. R. Counsel Argue on Grain Rates

This week will witness the conclusion of the general rates equalization case which has occupied the Dominion Railway Board at Ottawa and at various centers throughout Canada for some months. After the taking of evidence the past ten days have been consumed in argument by various counsel who will conclude their work this week. The case for the Canadian Pacific was presented last week by W. N. Tilley, special counsel and one of the directors of that road, and by E. P. Flintoft.

Three issues of prime importance were dealt with in the argument presented to the Railway Commission by Mr. Tilley. These were the interpretation of the legislation of 1925 dealing with the Crow's Nest Pass grain rates, the question whether the Crow's Nest Pass grain rates should be applied westbound from the prairies to the Pacific, and the great importance of adequate railway revenues if efficient service is to be maintained. Mr. Tilley was followed by E. P. Flintoft, C. P. R. counsel, who dealt with the claim of British Columbia for the abolition of the mountain differential and presented comparisons to show the greater cost of operating in the British Columbia district than on the prairies.

In interpreting the legislation of 1925 in regard to the Crow's Nest Pass rates, Mr. Tilley laid down three propositions:

(1)—The eastbound grain rates are statutory and are defined by the statute as being those in force under the Crow's Nest Pass Act. In order to apply Crow's Nest rates, it is the duty of the board, Mr. Tilley argued, to outline on a map the rates actually in existence in 1898 under the agreement, to deduce from this map the scale of rates, and to extend their application in accordance with that scale.

(2)—The provision against discrimination in the act of 1925 means discrimination as between Crow's Nest Pass rates and grain rates that do not comply with the Crow's Nest Pass Act. Mr. Tilley claimed that under the law the board was not at liberty to find that there was discrimination between two rates which were both contained in the Crow's Nest Pass Act.

(3)—The legislation of 1925 created a special territory west of Fort William. That territory has special rates, and there is no authority for applying those rates outside of it.

One of the issues to which Mr. Tilley applied his interpretation of the act was the claim of Saskatchewan and Alberta for the reduction of rates on the branch lines to the scale in force on the main line. The branch line rates, he argued, were themselves

Crow's Nest Pass rates, and, therefore, would not involve discrimination.

Dealing with the westbound grain rates from the prairies to Vancouver, Mr. Tilley claimed that there was no justification in law for the same mileage rates from the prairies to Vancouver as from the prairies to Fort William.

To fix such a scale meant disregard of the element of cost, and implied the charging of equal rates under unequal conditions.

The absolute necessity of surplus earnings for the maintenance of adequate railway service was shown, Mr. Tilley stated, by the experience of Canada during the war, when some railways found themselves quite unable to meet the financial pressure of those times. In this connection he quoted evidence presented to the board by W. M. Neal, assistant to the vice-president of the C. P. R., that in the five-year period from 1921 to 1925, the average annual surplus of the C. P. R. was only $1,377,635 on an average investment of $921,814,000. This, Mr. Tilley described as "not on the thin edge, but almost below" safety.

In calling the attention of the board to the difference in operation conditions between British Columbia and the prairies, Mr. Flintoft cited evidence in regard to tonnage carried on trains and in regard to the helper service. In connection with the latter, he directed attention to Mr. Neal's evidence in regard to permanent pushed service employed in handling of grain east from Calgary to Fort William, and west from Calgary to Vancouver. On the eastern haul from Calgary to Fort William he quoted Mr. Neal's evidence that the grades on which helper service was necessary were limited to fourteen miles, while on the westbound haul from Calgary to Vancouver the mileage of permanent pusher grades was 44.7. On the tonnage test he recalled the evidence of Mr. Neal that the average number of tons handled by an engine from Calgary to Fort William was 2,723, while westbound from Calgary to Vancouver, with the same class of engine, the average that could be handled was 1,554, showing a surplus of 1,169 tons per train on the eastbound movement.

The contrast, between mountain and prairie operation was further illustrated by Mr. Flintoft in an analysis of the evidence in regard to the number of trains necessary to move one thousand carloads of grain. From Maple Creek, Saskatchewan, the rate on grain is the same to Vancouver as it is to Fort William and Mr. Flintoft took this point for his illustration. From Maple Creek he quoted evidence to show that one thousand carloads of grain could be moved to Fort William in nineteen trains, while from Maple Creek to Vancouver 37.3 trains were necessary, or nearly twice as many on the westbound as on the eastbound movement.

"There are two ways of getting to the Pacific Coast," said Mr. Flintoft in relation to the mountain differential, "either over the mountains as the Canadian Pacific has done, or around them, as in the case of the Canadian National. In the face of all the evidence that is now before the board, can it be said with any justice that you should base a rate structure on our mileage and their grades?"

Equipment and Supplies

Locomotives

THE AMERICAN RAILROAD OF PORTO RICO is inquiring for two 4-6-0 type, narrow gage locomotives.

THE FERROCARRILL DE ANTIOQUIA (Colombia) has ordered two Mikado type locomotives from the Baldwin Locomotive Works.

THE CANTON-HANKOW is inquiring through Mitsui & Co., New York, for one consolidation type locomotive and one Mogul type locomotive.

THE ERIE is now inquiring for freight locomotives. In the *Railway Age* of April 2 it was reported that the Erie would buy 50 heavy Mikado type locomotives and 30 switch engines.

THE MONONGAHELA has ordered six Mikado type locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of April 9.

THE CHICAGO, BURLINGTON & QUINCY has ordered 12, 2-10-4 type locomotives from the Baldwin Locomotive Works. Inquiry for this equipment was reported in the *Railway Age* of November 20.

THE NEW YORK CENTRAL is inquiring for five 4-6-6 type locomotives. This is in addition to its inquiry for 66 locomotives reported in the *Railway Age* of April 16. The company is also inquiring for 30 locomotive tenders of 15,000 gal. capacity.

Freight Cars

THE AMERICAN SUGAR REFINING COMPANY is inquiring for about 125 cane cars.

THE CHICAGO, ROCK ISLAND & PACIFIC is inquiring for 100 underframes for ice cars.

THE FRUIT GROWERS EXPRESS is inquiring for 651 underframes for refrigerator cars.

THE SLOSS-SHEFFIELD STEEL & IRON COMPANY is inquiring for 30 quadruple hopper cars of 50 tons capacity.

THE PACIFIC FRUIT EXPRESS has ordered 600 underframes from the Pacific Car & Foundry Company.

THE SOUTHERN PACIFIC has ordered 500 sets of underframes and superstructures from the Greenville Steel Car Company.

THE GUANTANAMO SUGAR COMPANY has ordered 30 box cars of 30 tons capacity and 2 air dump cars of 20 cu. yd. capacity, from the Magor Car Corporation.

THE MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE has ordered 150 gondola cars from the Pullman Car & Manufacturing Corporation and 100 from the Siems-Stembel Company.

RUSSIAN RAILROADS. The engineering office of the Georgian Manganese Company, Ltd., at Tchiaturi, Russia, has made inquiries in this market for prices on ore carrying cars.

THE LEHIGH & NEW ENGLAND is inquiring for prices on repairs to 200 hopper cars. This is in addition to its inquiry for 200 box cars of 50 tons capacity reported in the *Railway Age* of April 23.

Passenger Cars

THE CHICAGO & ILLINOIS MIDLAND is inquiring for six miscellaneous passenger cars.

THE BALTIMORE & OHIO has ordered four passenger and smoking, gas-electric rail motor cars 60 ft. long from the J. C. Brill Company.

THE LEHIGH VALLEY has ordered one 60-ft. combination passenger and baggage gas-electric rail motor car from the Electro-Motive Company.

THE MISSOURI PACIFIC has ordered one gas-electric power plant for installation in an existing rail motor car, from the Electro-Motive Company.

Iron and Steel

THE ERIE is inquiring for 1,300 tons of steel for bridges.

THE CHESAPEAKE & OHIO is inquiring for 675,000 tie plates.

THE BOSTON & MAINE has ordered 500 tons of steel for bridges.

THE SOUTHERN has ordered 1,000 tons of steel for bridges from the Virginia Bridge & Iron Company.

THE TEXAS & PACIFIC is inquiring for 500 tons of structural steel for a bridge at Fort Worth, Texas.

THE ATLANTIC COAST LINE has ordered 175 tons of steel for bridges from the Virginia Bridge & Iron Company.

THE UNION PACIFIC has ordered 12,300 tons of rails and a quantity of tie plates and angle bars from the Colorado Fuel & Iron Company.

THE CHICAGO & WESTERN INDIANA has ordered 750 tons of structural steel for a viaduct at Chicago from the McClintic-Marshall Company.

THE NEW YORK CENTRAL is inquiring for 225 tons of steel for bridges. An order has also been placed for 250 tons. An order for 300 tons has been given to the Fort Pitt Bridge Company.

THE PENNSYLVANIA is inquiring for 2,500 tons of steel for bridges. Orders have recently been placed for 100 tons of steel with the Jones & Laughlin Steel Company and 750 tons with the Bethlehem Steel Company.

Machinery and Tools

THE CHICAGO, MILWAUKEE & ST. PAUL is inquiring for one single-end punch.

THE BALTIMORE & OHIO has ordered a 90-in. locomotive wheel quartering machine from the Niles-Bement-Pond Company.

THE DELAWARE, LACKAWANNA & WESTERN has ordered two 5-ft. plain right line radial drills, from the Niles-Bement-Pond Company.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for one double dry grinder, one heavy-duty lathe, one crank shaper and one sensitive drill press.

Signaling

THE CANADIAN PACIFIC has contracted with the General Railway Signal Company to furnish and install automatic block signals on its line between Guelph Junction, Ont., and Streetsville Junction, 18 miles; color-light signals, three-indication. Also, color-light automatic block signals for Three Rivers, Quebec, and for Smiths Falls, Ont.

THE CANADIAN PACIFIC has ordered from the Union Switch & Signal Company materials for automatic block signaling on its western lines between Albert Canyon and Revelstoke, 20 miles, and between Field and Leanchoil, 17 miles. This order includes 62 semaphore signals, style T-2, electrically lighted; 200 relays, 2,300 batteries, 33 battery wells and other material.

Car Retarders at Boston

The Boston & Maine has contracted with the Union Switch & Signal Company for the installation of electro-pneumatic car retarders at its classification yards at Mystic Junction, Boston, Mass. The order includes 30 car retarder units, 58 electro-pneumatic switches, four control machines and other apparatus; also, the necessary fixed signals. The arrangement of tracks in these yards is such that with a minimum number of car retarders the improvement will show substantial economies even with a movement as small as 800 cars a day.

ANCHOR FENCES.—The Anchor Post Fence Company, Garwood, N. J., has issued catalogue No. 68, containing 16 pages, illustrating and describing in detail the various types of intertrack and property protection fences and railroad gates which it manufactures. The catalogue also includes a number of specifications and details regarding the design and manufacturer of each of the parts that make up its types of fence construction.

Supply Trade

The Bird-Archer Company has removed its offices from 33 Rector street to the Corn Exchange Bank building, 1 East Forty-second street, New York City.

The National Railway Appliance Company has removed its office from 452 Lexington avenue, to the Graybar building, 420 Lexington avenue, New York City.

Charles A. Fisher, vice-president of the **Jones & Laughlin Steel Corporation,** has been elected president, with headquarters at Pittsburgh, Pa., to succeed the late W. Larimer Jones.

The Graybar Electric Company has removed its offices from 100 East Forty-second street, to the new Graybar building, Lexington avenue and Forty-third street, New York City.

The Pittsburgh Testing Laboratory, Pittsburgh, Pa., has opened a new inspection headquarters and physical testing laboratory at Youngstown, Ohio, in charge of **H. L. Christman,** who has been identified with the testing and inspection profession for more than twenty years.

A. Kastello has been appointed district sales representative of the **Detroit Stoker Company,** Detroit, Mich., for its eastern Canada and Montreal territories, with headquarters at 915 New Birks building, Montreal. **Mr. Kastello** formerly served for many years with different railway companies in Canada as mechanical engineer and power plant efficiency engineer.

The Bucyrus Company, South Milwaukee, Wis., has opened a branch sales office and repair parts depot at 1737 East Seventh street, Los Angeles, Cal. **J. H. Sackett,** local representative at Los Angeles, will have charge of sales in southern California, under the direction of **P. H. Birckhead,** western sales manager; and **W. O. Hahn** will have charge of the repair parts depot.

W. O. Forman, until recently mechanical superintendent of the Boston & Maine, has entered the service of **Manning, Maxwell & Moore, Inc.,** as assistant to Vice-President Frank J. Baumis. For the present he will specialize in factory operations and methods at the Putnam factory, Fitchburg, Mass., and the Shaw factory at Muskegon, Mich., of Manning, Maxwell & Moore, Inc.

The Prest-O-Lite Company, Inc., has sold the storage battery branch of its business to **The Prest-O-Lite Storage Battery Corporation,** a new company whose entire capital stock is owned by the **Automotive Battery Corporation of New York.** That portion of the Indianapolis plant of the Prest-O-Lite Company, Inc., used for the manufacture of storage batteries has been leased to the new company. The Prest-O-Lite Company, Inc., will continue the manufacture and sale of acetylene gas for use in the oxy-acetylene process of welding and cutting metals, automobile lighting, lead burning and similar industrial agencies.

The Marion Steam Shovel Company is about to be reorganized under the laws of the State of Ohio and will acquire all of the assets, except certain investments to be disposed of in connection with this financing, and assume all of the liabilities of a closely owned company of the same name incorporated in Ohio in 1884. The present company manufactures power excavating machines, cranes and miscellaneous equipment. An agreement recently entered into with Ransomes & Rapier, Ltd., of England, provides for the manufacture and distribution by that

International

A Reading Jersey Seashore Express in A. T. C. Territory

company, on a royalty basis, of Marion excavating machines in certain foreign countries.

E. W. Kolb, signal engineer of the Buffalo, Rochester & Pittsburgh for the past 17 years, has resigned to become manager of commercial testing and inspection of the **General Railway Signal Company** at Rochester, N. Y. Mr. Kolb entered Purdue University in September, 1891, and graduated with the degree of B.C.E., in June, 1895. From 1902 to 1908 he was employed on the Union Pacific successively as signal maintainer, signal draftsman, signal maintenance foreman and signal supervisor. On August 1, 1908, he was appointed assistant signal engineer of the Chicago, Rock Island & Pacific, and in February, 1910, became signal engineer of the Buffalo, Rochester & Pittsburgh.

Obituary

William Goodman, vice-president in charge of manufacturing of the Worthington Pump and Machinery Corporation, New York, died in the Manhattan Eye, Ear and Throat hospital in New York City on April 21. He was born in Cincinnati, O., 52 years ago. After graduating from Harvard in 1896, he entered the engineering department of the Laidlaw, Dunn, Gordon Company of Cincinnati, and, when that organization was absorbed by the Worthington Corporation, Mr. Goodman became general manager of the Cincinnati branch. He was transferred to New York in 1918 as assistant to the vice-president, and four years later, was elected vice-president. Under the supervision of Mr. Goodman, the Worthington Corporation's engineers developed the new double acting Diesel engine which the United States Shipping Board adopted for some of its ships. The feather valve air compressors and other engineering devices were also developed under his direction. Mr. Goodman was on active duty in the Spanish-American War as an ensign in the Navy, and during the World War offered his services as an engineer and was placed in charge of the manufacturing of munitions at the Worthington plant, Hazleton, Pa.

W. Goodman

Foreign Railways

British Railway Profits Show Big Decline in 1926

Net earnings on British railways in 1926 amounted to £19,100,000, a decrease of £17,635,847 as compared with 1925 and a loss of more than £26,000,000 as compared with 1913, according to advices from the American Consulate-General, London, made public by the Department of Commerce.

A preliminary statement issued by the British Ministry of Transport shows that gross passenger train receipts totaled £85,100,000 in 1926, as against £94,078,915 in 1925 and £54,525,821 in 1913. Gross receipts from freight trains during the past year amounted to £85,000,000, as compared with £103,676,384 in the preceding year and £64,254,895 in 1913.

The average rate of interest and dividends paid on outstanding capital was 3.6 per cent in 1926, as compared with 4.28 per cent in 1925 and 4.17 per cent in 1913.

Standardization of Equipment on Indian Railways

Definite progress is being made in the standardization of equipment on Indian railways, states a report to the Department of Commerce from Assistant Trade Commissioner Joseph B. Fitzgerald, Calcutta. As a result of the work of the Locomotive Standards Committee and of the Carriage and Wagon Standards Committee, the consulting engineers were entrusted with the preparation of drawings and specifications with a view to ordering a number of engines of a new type for trial as also a number of new type of "Indian State Railways" wagons which would supersede the present standards of the Indian Railway Conference Association.

The new types of locomotives as finally recommended by the consulting engineers were accepted by the Railway Board for trial as standards for general adoption and orders have already been placed. The consulting engineers supervise the preparation of accurate standard drawings of all details, during the manufacture of these locomotives.

The Carriage and Wagon Standards Committee is intended to be a permanent body. In order to prevent stagnation and ensure progressive improvements, the committee will be convened as required to advise the Railway Board on suggestions made to them by the various railway administrations.

Further, for the standardization of bridges, signaling and interlocking, a Standing Committee of Chief Engineers has been formed with their sub-committees functioning under it, which would deal in detail with (a) permanent way, (b) bridge work and (c) signaling and interlocking.

Cuban Railways Report Decreased Traffic

Decreases in traffic of Cuban railroads are shown for the year 1926, consequent upon the severe decline in the sugar industry, states a report from Consul M. Caffery, Havana, made public by the Department of Commerce. In making comparisons with the previous year, it should be borne in mind that the sugar crop of 1925, amounting to over 5,000,000 tons, was a record.

The annual statement of the United Railways of Havana for the fiscal year ended June 30, 1926, shows a decrease in gross receipts of £1,019,511, and a decrease in operating expenses of £77,890, compared with 1925. Goods and livestock traffic decreased from 16,786,215 tons in 1925 to 13,954,591 tons in 1926.

Gross receipts of the Cuban Railroad Company decreased from $6,422,828 for the fiscal year 1924-25 to $4,982,464 for the fiscal year 1925-26.

Construction

ALABAMA GREAT SOUTHERN.—The Alabama Public Service Commission has ordered this company to submit plans and specifications for improvement of the station facilities at York, Ala.

BIRMINGHAM SOUTHERN.—This road has been authorized to construct an extension of its railroad from Ensley through Pratt City to Thomas, a distance of 2.4 miles, all within the corporate limits of the city of Birmingham, Jefferson County, Ala. The estimated cost of construction is $301,240.

CHICAGO & NORTH WESTERN.—A certificate has been issued authorizing this road to construct a branch line of railroad in Butte and Lawrence counties, S. D., extending from a connection with one of its main lines at a point about 3 miles south of Belle Fourche, in a general southwesterly direction 3.5 miles. The cost of construction is estimated at $165,000.

CHICAGO & NORTH WESTERN.—A contract has been let to John Marsh, Chicago, for the construction of the Wiscona connecting line north of Milwaukee, Wis., 1.5 miles long, which will eliminate the present line through White Fish Bay, Wis., and Shorewood. The concrete structures required will be built by Henry Danischefsky, Milwaukee. The entire project will involve an expenditure of about $1,500,000 and has been undertaken at the urgent re-

quest of the two municipalities which objected to the operation of the railroad through their limits.

CHICAGO, ROCK ISLAND & PACIFIC.—Plans are in the course of preparation for the construction of additional locomotive repair shop facilities at Silvis, Ill., estimated to involve a total expenditure for buildings of $125,000.

DETROIT, GRAND HAVEN & MILWAUKEE and PONTIAC, OXFORD & NORTHERN.—These roads have been authorized to construct a line of railroad extending from a connection with the Detroit's railroad in a northerly and easterly direction to a connection with the Pontiac's line, a distance of 2.48 miles, all in Oakland County, Mich. The cost of construction is estimated at $315,136. This includes $130,000 for land.

GREAT NORTHERN.—The Oregon Trunk, controlled jointly by the Great Northern and Northern Pacific through the Spokane, Portland & Seattle, has notified the Interstate Commerce Commission that it is not willing to extend its line from Bend to Paunina, in southern Oregon, on the terms stated by the commission as a condition to its order authorizing the construction, or to take trackage rights over the Southern Pacific line from Paunina to Klamath Falls, Ore., as suggested by the commission, on the terms of the contract proposed by the Southern Pacific. At the same time the Great Northern individually applied to the commission for authority to intervene in the case as a substitute for the Oregon Trunk, and either to construct its own line from Bend to Klamath Falls or to construct its own line from Bend to Paunina and take trackage over the Southern Pacific from Paunina to Klamath Falls, without the participation of the Northern Pacific. The Great Northern represents in its application that it will be in the public interest to grant this application because it will "give the southern part of Oregon strong and effective competition which otherwise may never be realized" and without such action it may be excluded for all time from taking the part it desires to take, and the part it believes the public wishes it to take, in the development of southern Oregon. It therefore asks that the commission take advantage of the opportunity rather than release the Southern Pacific from any conditions attaching to construction of lines which it wishes to build. The commission had imposed conditions as to the joint use of lines to avoid duplicate construction. The Great Northern also asks authority to build a line from a connection with the Natron cut-off of the Southern Pacific to the terminal property of the Oregon Trunk at Klamath Falls and a line from it to Sprague river with two branches of 28 and 52 miles respectively to Bly and Klamath Marsh. However, in lieu of the latter lines, it expresses a willingness to accept a contract for joint use of lines of the Oregon, California & Eastern.

MISSOURI PACIFIC.—A contract has been let to the McGeorge Construction Company, Pine Bluff, Ark., for the construction of an extension from a point near Hot Springs, Ark., northwest to Mountain Pine, 12 miles, to provide an outlet for a lumber development at the latter point.

NEW YORK, CHICAGO & ST. LOUIS.—A contract for the design and construction of a one-story steel frame warehouse building, with outside dimensions of 80 ft. by 320 ft., at East Forty-fifth street and Woodland avenue, Cleveland, O., has been awarded to the Austin Company, Cleveland, at a cost of about $70,000. An inside loading dock will extend along the total length of the building. Included in the contract is the placing of 80,000 cu. yd. of earth in a ravine to provide the roadbed for sidings.

PANHANDLE & SANTA FE.—This company has applied to the Interstate Commerce Commission for authority to build a line of 21 miles from White Deer to a point in Hutchinson county, Tex.

PIEDMONT & NORTHERN.—Arguments were heard by Division 4 of the Interstate Commerce Commission on April 22 on the question of whether an electric railroad proposed to be built by this company in North and South Carolina is within the jurisdiction of the federal commission to the extent that a certificate of public convenience and necessity authorizing the proposed construction is necessary. The company proposes to build from Spartanburg, S. C., to Gastonia, N. C., 53 miles, and from Charlotte to Winston-Salem, N. C., 75 miles. Mark W. Potter, formerly a member of the Interstate Commerce Commission, appeared as counsel for the road and argued in support of a motion that the company's application for authority to build the line be dismissed for want of jurisdiction, on the ground that it is an interurban electric railway. Counsel for the Atlantic Coast Line, Seaboard Air Line and Southern railways, which are opposing the construction of the line, took the position that what is proposed is an interstate railroad of which the commission should take jurisdiction.

READER.—The Interstate Commerce Commission has made public a report proposed by Examiner Sullivan recommending a finding by the commission that public convenience and necessity do not require the construction proposed by this company of a line from Hope to El Dorado, Ark., 63 miles, and an extension from Waterloo to McNeil, Ark., 15 miles. The real need of the territory involved, the examiner said, appears to be adequate highways rather than an additional railroad, because no point in the territory is more than 15 miles from an existing railroad and any development justifying additional railroad service could and doubtless would be taken care of by the construction of an extension of the railroad nearest such development.

SOUTHERN.—A contract has been awarded to Fairbanks, Morse & Co., Chicago, for the construction of coaling stations, sanding facilities and cinder-handling equipment at the following points: Monroe, Va., 1,000-ton reinforced concrete three-track coaling station; Columbia, S. C., 1,000-ton reinforced concrete four-track coaling station; Atlanta Junction, Ga., 800-ton reinforced concrete four-track coaling station; Bulls Gap, Tenn., 600-ton reinforced concrete three-track coaling station; Coster, Tenn., 500-ton reinforced concrete two-track coaling station; Sheffield, Ala., 500-ton reinforced concrete three-track coaling station; Jacksonville, Fla., 300-ton steel three-track coaling station with yard storage for 5,000 tons of coal; Lawrenceburg, Ky., 300-ton steel two-track coaling station; Winston-Salem, N. C., 300-ton steel two-track coaling station. Each of the reinforced concrete coaling stations will have storage space for 100 tons of wet sand and 20 tons of dry sand and each of the steel coaling stations will have storage space for 100 tons of wet sand and 10 tons of dry sand. Electric single-track cinder-conveying units will be installed at Columbia, Atlanta Junction, Winston-Salem and Jacksonville.

Railway Finance

ATLANTIC COAST LINE.—*Acquisition.*—The Interstate Commerce Commission has authorized this company to acquire control by lease of the Washington & Vandemere extending from Washington, N. C., to Vandemere, 40.52 miles. The lease is for a term of 99 years. The Atlantic Coast Line owns all of the outstanding capital stock of the Washington & Vandemere.

BEAUMONT, SOUR LAKE & WESTERN.—*Acquisition.*—The Interstate Commerce Commission has authorized this company to acquire control of the Houston North Shore by purchase of capital stock and by lease and to operate its line in Harris county, Tex.

CANADIAN NATIONAL.—*Equipment Trust Certificates.*—Dillon, Read & Co., have announced that, on behalf of a group consisting of themselves, the National City Guaranty Co., Bankers Trust Co., Lee, Higginson & Co., White, Weld & Co., Harris Forbes & Co. and the Dominion Securities Corporation, they have concluded negotiations with the Canadian National Railways for $15,000,000 4½ per cent equipment trust certificates.

CHESAPEAKE & OHIO.—*Hearings on Merger to Begin May 10.*—The Interstate Commerce Commission has assigned for hearing at Washington beginning on May 10 this company's application for authority to acquire control of the Erie and Pere Marquette and also its application for authority to issue additional capital stock. The hearing will be before Director C. D. Mahaffie of the commision's Bureau of Finance.

CHICAGO & NORTH WESTERN.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges of $12,419,841 equivalent after preferred dividends to $6.92 a share on the common stock. Net income in 1925 was $10,784,578 or $6.34 a share. See excerpts from annual report appearing on adjacent pages.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges of $809,742 equivalent after allowance for 7 per cent dividends on the preferred stock to $0.11 a share on the common. Net income in 1925 was $813,165 or $0.13 a share. Dividends on the preferred in both years were 5 per cent. See excerpts from annual report appearing on adjacent pages.

DELAWARE, LACKAWANNA & WESTERN. —*Proposed Transfer of Bonds.*—A hearing was held before Examiner Boles of the Interstate Commerce Commission on April 22 on the application of this company and its subsidiaries, the New York, Lackawanna & Western and the Morris & Essex, for authority for the transfer of $19,871,000 of Morris & Essex bonds and $13,635,000 of N. Y., L. & W., bonds to the Lackawanna Securities Company, a new company, as part of $92,600,000 of bonds to be transferred to the new company, the shares of which are to be distributed to the stockholders of the D. L. & W. When the commission authorized the issues of bonds of the two subsidiary companies in 1922 and 1925, it added a provision that the bonds should not be disposed of by the Lackawanna except upon further order of the commission.

DENVER & RIO GRANDE WESTERN.—*Acquisition.*—The Interstate Commerce Commission has authorized this company to acquire control of the Goshen Valley by purchase of stock and by lease. The commission has authorized an issue of $1,575,000 of equipment trust certificates, to be sold at not less than 98.3017.

INTERNATIONAL-GREAT NORTHERN.—1926 *Earnings.*—Annual report for 1926 shows net income of $684,650 as compared with

(*Continued on page* 1372)

Annual Reports

Seventy-seventh Annual Report of the Illinois Central Railroad Company for the Year Ended December 31, 1926

Report of the Board of Directors

To the Stockholders of the Illinois Central Railroad Company:

The Board of Directors submits the following report of the operations and affairs of the Illinois Central Railroad Company for the year ended December 31, 1926, including The Yazoo & Mississippi Valley Railroad Company, the entire capital stock of which is owned or controlled by the Illinois Central Railroad Company. For convenience the two companies are designated by the term "Illinois Central System."

The number of miles of road operated as of December 31, 1925, was		6,242.78
Additions for year:		
June 2, 1926:		
Alabama & Vicksburg Railway	141.69	
Vicksburg, Shreveport & Pacific Railway	188.69	
	330.38	
Less—Various changes due to remeasurements, etc.	.06	330.32
The number of miles operated as of December 31, 1926, was		6,573.10
The average number of miles of road operated during the year was		6,435.61

Income

A summary of the income for the year ended December 31, 1926, as compared with the previous year is stated below:

	1926	1925	Increase + Decrease —
Average miles operated during year	6,435.61	6,243.25	+ 192.36
Railway operating revenues	$186,632,489.54	$178,169,625.41	+ $8,462,864.13
Railway operating expenses	143,119,861.89	135,382,526.64	+ 7,737,335.25
Net revenue from railway operations	43,512,627.65	42,787,098.77	+ 725,528.88
Railway tax accruals	12,344,721.03	12,729,951.31	— 385,230.28
Uncollectible railway revenues	47,441.52	38,344.56	+ 9,096.96
Railway operating income	31,120,465.10	30,018,802.90	+ 1,101,662.20
Equipment rents—net debit	1,573,573.22	618,891.32	+ 954,681.90
Joint facility rent — net credit	647,658.89	527,031.61	+ 120,627.28
Net railway operating income	30,194,550.77	29,926,943.19	+ 267,607.58
Non-operating income	4,540,606.30	3,623,813.37	+ 916,792.93
Gross income	34,735,157.07	33,550,756.56	+ 1,184,400.51
Deductions from gross income	17,584,758.50	15,999,013.90	+ 1,585,744.60
Income balance transferred to credit of profit and loss	17,150,398.57	17,551,742.66	— 401,344.09

Railway Operating Revenues

"Railway Operating Revenues" amounted to $186,632,489.54 this year, as compared with $178,169,625.41 last year, an increase of $8,462,864.13, or 4.75 per cent. For details of "Railway Operating Revenues" see Table 2.

"Freight Revenue" increased $7,880,686.46, or 5.75 per cent The increase was due partly to mileage added during the year as a result of the lease of the Alabama & Vicksburg, and the Vicksburg, Shreveport & Pacific Railways and partly to the increase in the volume of business transported as reflected in Table 13. There was no material change in freight rates during the year. Tons of revenue freight carried one mile were 15,779,569,491, an increase of 887,624,647, or 5.96 per cent compared with last year. The average rate per ton per mile was .919 cent, a decrease of .002 cent, or 0.22 per cent, compared with the previous year.

"Passenger Revenue" increased $91,305.45, or 0.32 per cent. The number of passengers carried one mile was 956,613,404, a decrease of 11,443,489, or 1.18 per cent, compared with last year. The average revenue per passenger per mile increased .044 cent, or 1.51 per cent. The increase in "Passenger Revenue" was due to an increase in Chicago suburban passenger rates, and to increased suburban travel; partly offset by a falling off in other passenger traffic, due to a decrease in Florida travel, and to motor competition.

"Mail Revenue" increased $33,355.97, or 1.30 per cent, due to the increased mileage operated.

"Express Revenue" increased $186,881.78, or 4.62 per cent, due partly to the increased mileage operated and partly to the increased volume of express business transported.

There was a decrease of $9,312.99, or 0.68 per cent, in other passenger train revenue, consisting of "Excess Baggage," "Parlor and Chair Car," "Milk" and "Other Passenger Train Revenue." There were increases in payments received from The Pullman Company for operating sleeping cars over system lines and in revenue received for handling newspapers on passenger trains. These increases were more than offset by decreases in other revenues due to the decline in passenger travel and by a decrease in the volume of milk transported.

The increase of $45,875.96, or 2.14 per cent, in "Switching" and "Special Service Train Revenue" was due to increased business.

"Incidental" and "Joint Facility Revenues" increased $234,071.50, or 8.72 per cent, largely due to the increased mileage operated during the year.

Railway Operating Expenses

"Railway Operating Expenses" amounted to $143,119,861.89 this year as compared with $135,382,526.64 last year, an increase of $7,737,335.25, or 5.72 per cent. For details of "Railway Operating Expenses" see Table 10.

There was an increase of $1,400,328.04, or 5.31 per cent, in "Maintenance of Way and Structure Expenses," due partly to the increased mileage operated and partly to increased outlays for roadway repairs.

The increase of $3,025,853.74, or 7.83 per cent, in "Maintenance of Equipment Expenses" was due to increased expenditures for repairs to locomotives and freight train cars and to increased charges for depreciation on account of additional equipment placed in service.

The increase in "Traffic Expenses" of $472,819.46, or 15.45 per cent, was largely due to an extension of activities in solicitation and advertising, which was influenced to some extent by the added mileage operated during the year.

There was an increase of $2,156,806.20, or 3.45 per cent, in "Transportation Expenses," due to the increased mileage operated and to the increased volume of business transported.

The decrease of $53,813.09, or 4.09 per cent, in "Miscellaneous Operations" was largely due to a reduction in the expenses of operating dining and buffet service.

"General Expenses" increased $393,369.21, or 8.84 per cent, due in part to increased pensions and law expenses and in part to increased mileage operated.

The increase in expenses by reason of the decrease of $341,971.69 in "Transportation for Investment—Credit" was due to a decrease in transportation performed in connection with the construction work carried on during the year.

Railway Tax Accruals

"Railway Tax Accruals" amounted to $12,344,721.03 this year, as compared with $12,729,951.31 last year, a decrease of $385,230.28, or 3.03 per cent. The taxes for the year were equal to 28.37 per cent of the "Net Revenue from Railway Operations," and exceeded the total dividends paid to stockholders by $1,797,011.03.

Uncollectible Railway Revenues

"Uncollectible Railway Revenues" were $47,441.52 this year as compared with $38,344.56 last year, an increase of $9,096.96.

Equipment Rents—Net Debit

"Equipment Rents—Net Debit" amounted to $1,573,573.22 this year as compared with $618,891.32 last year, an increase of $954,681.90, due to the increased use of foreign and privately owned freight cars by reason of the increase in the amount of business handled.

Joint Facility Rent—Net Credit

"Joint Facility Rent—Net Credit" was $647,658.89 this year and $527,031.61 last year, an increase of $120,627.28 largely due to increased use of this company's facilities by tenant companies.

Non-Operating Income

"Non-operating Income" amounted to $4,540,606.30 this year as compared with $3,623,813.37 last year, an increase of $916,792.93. There was an increase in "Income From Unfunded Securities and Accounts" of $531,723.11, made up partly of interest from temporary loans of funds derived from the sale of securities during the year and partly of interest during construction on capital outlays during the year. "Dividend Income" increased $500,000.00 as a result of the dividend of this amount received this year from the Madison Coal Corporation, from which source no income was received last year. Other items of increase were "Income From Capital Advances to Affiliated Companies," $67,629.55; "Income From Lease of Road," $1,654.07, and "Miscellaneous Income," $6,066.37. These increases were partly offset by a decrease in "Income from Funded Securities" of $118,309.64, representing interest on government securities sold during the year; a decrease in "Miscellaneous Rent Income" of $42,223.87, due largely to heavy repairs to leased property, and a decrease in "Income from Miscellaneous Non-operating Physical Property" of $29,746.66, consisting of a reduction in income from track materials leased.

Deductions from Gross Income

"Deductions From Gross Income" amounted to $17,584,758.50 this year as compared with $15,999,013.90 last year, an increase of $1,585,744.60. There was an increase in "Interest on Funded Debt" of $915,635.49, due to the inclusion of interest for the entire year on securities issued last year, and of interest for portions of the year on securities issued during the current year, less interest on equipment trusts retired, as compared with a part year's interest on securities issued during the previous year, a comparison of which may be made by reference to Table 7 in the report this year and the corresponding table for the previous year. The increase of $614,341.31 in "Rent for Leased Roads" was made up of rent of the Alabama & Vicksburg Railway of $253,456.29, of rent of the Vicksburg, Shreveport & Pacific Railway of $295,299.82 and of an increase in rents of the Dubuque & Sioux City Railroad of $65,585.20. The increase of $48,969.82 in "Interest on Unfunded Debt" consists of interest on temporary loans. The increase of $48,367.11 in "Amortization of Discount on Funded Debt" was due to the inclusion of the pro rata of discount and expenses on securities issued during the year. These increases were offset partly by a decrease of $38,866.14 in "Separately Operated Properties—Loss," due to a reduction in the loss of operating elevators at New Orleans, and partly by a net decrease in minor items of $2,702.99.

Capital Stock and Funded Debt

There were issued and sold during the year $329,400.00 par value of the Six Per Cent Convertible Preferred Stock, Series "A," representing the balance of shares not subscribed for by shareholders under the authorization of September 29, 1925. Preferred Stock with a par value of $4,260,000.00 was converted into Common Stock during the year.

Illinois Central Equipment Trust Certificates, Series "M," amounting to $5,018,000.00 were issued and sold in May, 1926.

Illinois Central Equipment Trust Certificates, Series "N," amounting to $4,665,000.00 were issued and sold in November, 1926.

Illinois Central Railroad Company Forty-Year Four and Three-Quarter Per Cent Gold Bonds amounting to $35,000,000.00 were issued and sold in October, 1926.

Under the terms of the Illinois Central Railroad Company and the Chicago, St. Louis & New Orleans Railroad Company Joint First Refunding Mortgage, there were issued $11,500.00 par value of Series "A," or Dollar Bonds in exchange for £2,300 Sterling Bonds, the equivalent of $11,155.00 of Series "B," or Sterling Bonds upon payment of the difference of $345.00.

There were retired and canceled under the terms of the respective trust agreements Illinois Central Equipment Trust, Series "E," $550,000.00; Series "F," $737,000.00; Series "G," $324,000.00; Series "H," $217,000.00; Series "I," $443,000.00; Series "K," $863,000.00; Series "L," $616,000.00; Government Equipment Trust No. 33, $647,100.00; and under the equipment contract with The Pullman Company, $165,258.18; a total of $4,562,358.18.

Securities Owned

There were sold during the year $2,017,200.00 par value of United States Second Liberty Loan Four and One-Quarter Per Cent Bonds of 1927-1942; $2,500,000.00 par value of United States Third Liberty Loan Four and One-Quarter Per Cent Bonds of 1928, and $475,000.00 par value of United States Fourth Liberty Loan Four and One-Quarter Per Cent Bonds of 1933-1938.

The Peoria & Pekin Union Railway Company redeemed $15,000.00 par value of its Five Per Cent Debenture Bonds maturing November 1, 1926.

New Line—Edgewood, Ill., to Fulton, Ky.

Construction of the railroad from Edgewood, Ill., to Fulton, Ky., referred to in the previous report, was continued during the year. Grading and track laying were completed on the line south of the Ohio River. On the line north of the Ohio River 97 per cent of the grading was completed and 47 per cent of the track was laid.

Additions and Betterments—Expenditures:

There was expended during the year for "Additions and Betterments" (including improvements on subsidiary and lessor properties) $49,444,210.48. The following is a classified statement of these expenditures:

Road:	Total Expended
Engineering	$1,147,181.74
Land for transportation purposes	179,607.49
Grading	7,377,203.24
Tunnels and subways	810,660.66
Bridges, trestles and culverts	2,199,745.20
Ties	1,011,151.48
Rails	1,117,833.00
Other track material	1,318,396.08
Ballast	656,862.04
Track laying and surface	944,558.33
Right-of-way fences	11,968.35
Crossings and signs	1,075,599.00
Station and office buildings	1,234,047.98
Roadway buildings	99,999.63
Water stations	677,934.16
Fuel stations	Cr. 35,195.23
Shops and enginehouses	4,064,076.19
Grain elevators	Cr. 3,988.22
Storage warehouses	4,892.15
Wharves and docks	5,917.13
Telegraph and telephone lines	870,805.71
Signals and interlockers	1,403,956.70
Power plant buildings	180,439.08
Power substation buildings	Cr. 1,212.17
Power transmission systems	Cr. 22,145.34
Power distribution systems	1,689,902.72
Power line poles and fixtures	552,225.67
Underground conduits	17,843.26
Miscellaneous structures	16,461.47
Paving	39,062.44
Roadway machines	121,575.93
Roadway small tools	3,294.33
Assessments for public improvements	345,969.07
Revenues and operating expenses during construction	Cr. 450.00
Cost of road purchased	2,550.00
Other expenditures—Road	11,810.76
Shop machinery	1,293,916.18
Power plant machinery	49,706.76
Power substation apparatus	1,587.72
Unapplied construction material and supplies	Cr. 291,546.59
Total	$30,184,204.10
Equipment:	
Steam locomotives	$5,261,013.09
Other locomotives	2,725.84
Freight train cars	4,297,939.14
Passenger train cars	5,373,010.90
Motor equipment of cars	3,713,817.84
Work equipment	96,547.58
Miscellaneous equipment	21,250.28
Total	$18,766,304.67

GENERAL		
Organization expenses	Cr.	$2,700.52
General officers and clerks		29,154.25
Law		664.95
Stationery and printing		286.24
Taxes		20.00
Interest during construction		466,276.79
TOTAL		$493,701.71
GRAND TOTAL*		$49,444,210.48

General Remarks

The Interstate Commerce Commission, in an order dated May 3, 1926, and effective thirty days thereafter, approved the leases of the Alabama & Vicksburg, and Vicksburg, Shreveport & Pacific Railways, and the operations of these lines were included in the system operations beginning June 2, 1926. The added mileage accounted in part for the increase in business during the year, but apart therefrom the system traffic as a whole enjoyed a moderate increase throughout the territory served.

This year marked the completion of the electrification of suburban train operations at Chicago. The first electric train was placed in service on August 7, 1926, and the service was entirely operated electrically by September 26, 1926. This improvement has given considerable impetus to the development for residential purposes of property in suburban territory and has resulted in an increase in suburban passenger travel to and from the city.

The number of stockholders of record at the close of the year was 23,471, of whom 16,084 were holders of common shares and 7,387 were holders of preferred shares. There were 24,352 stockholders at the close of the previous year.

The Board of Directors takes pleasure in expressing its appreciation to the officers and employes for their loyal and efficient services.

By order of the Board of Directors.

C. H. MARKHAM, Chairman.

Illinois Central System Condensed General Balance Sheet

December 31, 1926, and Comparison with December 31, 1925

ASSET SIDE	DECEMBER 31, 1926	DECEMBER 31, 1925	INCREASE OR DECREASE
INVESTMENTS:			
Road and equipment to June 30, 1907	$169,510,131.34	$169,510,131.34	.....
Road and equipment since June 30, 1907	274,660,534.39	243,737,546.44	$30,922,987.95
Total road and equipment	$444,170,665.73	$413,247,677.78	$30,922,987.95
Miscellaneous physical property	$2,046,266.19	$2,018,962.53	$27,303.66
Investments in affiliated companies:			
Stocks	$38,059,477.08	$37,697,477.08	$362,000.00
Bonds	18,857,841.43	18,709,674.76	148,166.67
Notes	1,000,000.00	1,000,000.00	.....
Advances	162,060,699.49	144,258,847.30	17,801,852.19
	$219,978,018.00	$201,665,999.14	$18,312,018.86
Other investments:			
Stocks	$51,051.00	$51,051.00	.....
Bonds	5,384,792.61	10,042,638.99	—$4,657,846.38
Notes, advances, etc.	1,208,775.26	133,253.08	1,075,522.18
	$6,644,618.87	$10,226,943.07	—$3,582,324.20
Total investments	$672,839,568.79	$627,159,582.52	$45,679,986.27
CURRENT ASSETS:			
Cash	$6,679,809.27	$9,508,352.46	—$2,828,543.19
Special deposits	892,596.81	9,719,501.48	—8,826,904.67
Loans and bills receivable	13,544,474.58	30,434.47	13,514,040.11
Traffic and car-service balances receivable	2,738,151.44	2,950,219.09	—212,067.65
Net balance receivable from agents and conductors	3,786,632.94	4,252,436.63	—465,803.69
Miscellaneous accounts receivable	9,916,643.80	7,078,277.41	2,838,366.39
Material and supplies	13,915,274.82	13,970,706.84	—55,432.02
Interest and dividends receivable	251,033.54	177,168.55	73,864.99
Total current assets	$51,724,617.20	$47,687,096.93	$4,037,520.27
DEFERRED ASSETS:			
Working fund advances	$45,881.83	$86,081.38	—$40,199.55
Other deferred assets	2,211,285.10	130,929.55	2,080,355.55
Total deferred assets	$2,257,166.93	$217,010.93	$2,040,156.00
UNADJUSTED DEBITS:			
Discount on funded debt	$6,569,423.30	$4,518,089.18	$2,051,334.12
Other unadjusted debits	4,136,910.84	3,502,023.29	634,887.55
Total unadjusted debits	$10,706,334.14	$8,020,112.47	$2,686,221.67
Grand Total	$737,527,687.06	$683,083,802.85	$54,443,884.21

*The foregoing statement includes $18,521,222.53 advanced during the year for additions and betterments to the properties of subsidiary and lessor companies as follows:

Batesville Southwestern R. R. Co.		$4,216.41
Baton Rouge, Hammond & Eastern R. R. Co.		34,864.05
Benton Southern R. R. Co.		13,178.31
Blue Island R. R. Co.		184,776.14
Canton, Aberdeen and Nashville R. R. Co.		43,299.38
Chicago, St. Louis & New Orleans R. R. Co.		9,357,779.01
Chicago, Memphis & Gulf R. R. Co.		13,471.72
Dubuque and Sioux City R. R. Co.		776,379.56
Fredonia & Reeds R. R. Co.	Cr.	880.35
Golconda Northern Ry.		13,684.45
Kensington and Eastern R. R. Co.		138,742.13
Memphis Railroad Terminal Co.	Cr.	177,294.44
South Chicago R. R. Co.		307,688.31
Southern Illinois and Kentucky R. R. Co.		7,607,421.69
TOTAL SUBSIDIARY COMPANIES		$18,317,326.37
The Alabama & Vicksburg Ry. Co.		$137,784.53
Vicksburg, Shreveport & Pacific Ry. Co.		66,111.63
TOTAL LESSOR COMPANIES		$203,896.16
GRAND TOTAL		$18,521,222.53

LIABILITY SIDE	DECEMBER 31, 1926	DECEMBER 31, 1925	INCREASE OR DECREASE
STOCK:			
Common stock	$129,181,600.00	$124,921,600.00	$4,260,000.00
Less: Held in treasury	208.33	208.33	.....
Total common stock outstanding	$129,181,391.67	$124,921,391.67	$4,260,000.00
Preferred stock, series "A"	25,263,800.00	29,194,400.00	—3,930,600.00
Premium on capital stock	138,754.53	75,360.03	63,394.50
Total stock outstanding	$154,583,946.20	$154,191,151.70	$392,794.50
GOVERNMENTAL GRANTS:			
Grants in aid of construction	$8,968.70	$42,798.08	—$33,829.38
LONG-TERM DEBT:			
Funded debt	$442,853,344.42	$402,732,357.60	$40,120,986.82
Less: Owned within the System (Table 7)	75,645,000.00	75,645,000.00	.....
Total long-term debt outstanding (Table 7)	$367,208,344.42	$327,087,357.60	$40,120,986.82
CURRENT LIABILITIES:			
Traffic and car-service balances payable	$4,283,937.60	$4,409,593.95	—$125,656.35
Audited accounts and wages payable	22,733,184.06	23,409,049.14	—675,865.08
Miscellaneous accounts payable	1,383,399.21	899,606.61	483,792.60
Interest matured unpaid	1,933,228.88	1,931,368.38	1,860.50
Dividends matured unpaid	48,939.55	48,937.25	2.30
Funded debt matured unpaid	14,041.70	105,331.16	—91,289.46
Unmatured dividends declared	3,018,354.50	3,060,171.00	—41,816.50
Unmatured interest accrued	2,856,306.13	2,153,086.32	703,219.81
Unmatured rents accrued	397,417.76	39,000.62	358,417.14
Other current liabilities	241,939.61	245,507.00	—3,567.39
Total current liabilities	$36,910,749.00	$36,301,651.43	$609,097.57
DEFERRED LIABILITIES:			
Other deferred liabilities	$4,381,917.26	$300,240.95	$4,081,676.31
Total deferred liabilities	$4,381,917.26	$300,240.95	$4,081,676.31
UNADJUSTED CREDITS:			
Tax liability	$6,491,916.93	$9,288,146.50	—$2,796,229.57
Insurance reserve	3,304,278.21	3,344,247.71	—39,969.50
Accrued depreciation—Equipment	57,386,350.20	51,431,822.81	5,954,527.39
Other unadjusted credits	7,324,658.15	6,467,360.60	857,297.55
Total unadjusted credits	$74,507,203.49	$70,531,577.62	$3,975,625.87
CORPORATE SURPLUS:			
Additions to property through income and surplus	$10,185,759.35	$10,122,170.25	$63,589.10
Profit and loss (Table 3)	76,387,391.15	71,153,447.73	5,233,943.43
Total corporate surplus	$86,573,150.50	$81,275,617.98	$5,297,532.52
As this consolidated balance sheet excludes all intercompany items, securities of The Yazoo & Mississippi Valley Railroad Company owned by the Illinois Central Railroad Company and its subsidiaries are not included. The difference between the par value of such securities as carried on the books of The Yazoo & Mississippi Valley Railroad Company and the amount at which the securities are carried on the books of the Illinois Central Railroad Company is entered here to balance	$13,353,407.49	$13,353,407.49	.....
Grand Total	$737,527,687.06	$683,083,802.85	$54,443,884.21

Sixty-Seventh Annual Report of the Chicago and North Western Railway Company Year Ending December 31, 1926

Report of the Board of Directors

To the Stockholders of the Chicago and North Western Railway Company:

The Board of Directors submits herewith its report of the operations and affairs of the Company for the year ending December 31, 1926.

Average mileage of road operated, 8,458.91.

OPERATING REVENUES:		
Freight	$110,229,474.60	
Passenger	26,592,517.32	
Other Transportation	14,288,344.85	
Incidental	3,225,387.37	
		$154,335,724.14
OPERATING EXPENSES:		
Maintenance of Way and Structures	$ 23,290,735.95	
Per Cent. of Operating Revenues	15.09	
Maintenance of Equipment	31,917,474.48	
Per Cent. of Operating Revenues	20.68	
Traffic	2,453,744.30	
Per Cent. of Operating Revenues	1.59	
Transportation	58,127,865.55	
Per Cent. of Operating Revenues	37.66	
Miscellaneous Operations	1,081,255.15	
Per Cent. of Operating Revenues	.70	
General	4,075,241.37	
Per Cent. of Operating Revenues	2.64	
Transportation for Investment-Cr.	357,933.35	
Per Cent. of Operating Revenues	.23	
		120,588,383.45
Per Cent. of Operating Revenues		78.13
Net Revenue from Railway Operations		$ 33,747,340.69
RAILWAY TAX ACCRUALS	$9,278,362.96	
Per Cent. of Operating Revenues	6.01	
UNCOLLECTIBLE RAILWAY REVENUES	39,530.45	
		9,317,893.41
Railway Operating Income		$24,429,447.28
EQUIPMENT AND JOINT FACILITY RENTS—Net Debit		2,134,308.09
Net Railway Operating Income		$22,295,139.19
NONOPERATING INCOME:		
Rental Income	$798,083.19	
Dividend Income	1,383,404.72	
Income from Funded Securities	34,243.00	
Income from Unfunded Securities and Accounts, and Other Items	489,671.98	
		2,705,402.89
Gross Income		$25,000,542.08
DEDUCTION FROM GROSS INCOME:		
Rental Payments	$10,286.96	
Interest on Funded Debt	12,406,812.11	
Other Deductions	163,601.68	
		12,580,700.75
Net Income		$12,419,841.33
DIVIDENDS:		
7% on Preferred Stock	$1,567,650.00	
4% on Common Stock	6,243,250.00	
		7,810,900.00
Balance Income for the Year		$4,608,941.33

General Remarks

During the year 1926, the Company rebuilt the following freight equipment with its own forces under a unit repair program:

1,678 Box cars.
232 Automobile cars.
358 Refrigerator cars.
439 Stock cars.
515 Gondola cars.

3,222

In addition to the foregoing, the Company built 1,000 automobile cars in its shops, and purchased 500 stock cars, 150 seventy-five ton iron ore cars, and 250 Hart convertible gondola cars, making a total of 5,122 new and rebuilt freight cars put in service during the year. The Company also purchased 2 oil-electric switch locomotives and 3 gasoline-electric motor cars.

The net additions to investment in road and equipment, aggregated $9,679,837.71. Some of the larger items consisted of strengthening bridges between Eland and Marshfield, Wisconsin, and Norfolk and Chadron, Nebraska, to carry heavier motive power and thereby making it possible to increase the tonnage per train. There were constructed new passing tracks and numerous extensions of existing passing tracks at various locations on the system to accommodate additional and longer trains.

The Company constructed seven modern mechanical coal handling plants, three of which have a capacity of 50 tons each, two a capacity of 100 tons each, and two a capacity of 150 tons each. Nine modern water treating plants were constructed and placed in operation. The Pintsch gas plant at Western Avenue coach yard in Chicago was improved and enlarged.

At Green Bay, Wisconsin, the Company constructed a modern concrete elevator with a capacity of 400,000 bushels. At Watersmeet, Michigan, a modern eight stall engine house was constructed. At Antigo, Wisconsin, a new power plant was constructed at the engine house. At Fremont, Nebraska, six stalls were added to the engine house. At the Chicago Shops there was installed two 500 h. p. water tube boilers, and at Green Bay, Wisconsin, a frame dock house and platform were provided to accommodate the increasing volume of business interchanged with boat lines.

At Proviso, Illinois, construction of thirty new yard tracks was completed, each track having a 100 car capacity, and subways were provided at the south end of this yard to carry Lake Street and North Avenue under the tracks. During the year work was also commenced on a merchandise freight house, and the office portion thereof has been completed. These are the first steps in the program for revising and enlarging Proviso Yard.

Tie treating plants at Escanaba, Michigan, and Riverton, Wyoming, are now being enlarged and equipped with facilities for creosote treatment of ties.

Substantial progress was made on the track elevation work in Chicago, in the vicinity of Mayfair. This work will be completed about September 1st, 1927.

Automatic train control between Clinton and Boone, Iowa, has been installed, which completes the installation of automatic train control from Clinton to Council Bluffs, Iowa, as ordered by the Interstate Commerce Commission.

At several water stations provision was made for electrical operation of pumps, thereby discontinuing use of gasoline and steam pumps and men to operate them. New and improved shop tools were supplied at practically every shop and repair yard on the system.

At Racine Junction, Wisconsin, additional yard tracks were provided for the handling of automobile shipments, and also at Manitowoc, Wisconsin, for the adequate handling of car ferry interchange traffic, which had outgrown former facilities and caused serious delays and expense.

The foregoing is not an attempt to set out in detail all the additions and betterments made during the year, but is intended only as an outline of the general nature of the improvements which the Company has undertaken.

On November 10, 1926, notice was received from the Interstate Commerce Commission that it had completed the tentative valuation of the properties of the Company and its subsidiaries. The Commission found that "the values for rate making purposes, of the property of the 'North Western,' owned or used, devoted to common carrier purposes, as of June 30, 1917, were:

Total property used	$481,679,456.00
Property owned but not used	219,249.00

Previously, the Commission had reported values of certain subsidiaries other than those included in the foregoing, which makes the total value as found by the Commission for rate making purposes, as of June 30, 1917, $491,894,164.00, or about $65,000,000.00 more than the total book value on that date. In addition, the Commission found that the Company had other assets of the value of $73,264,315.00. The total amount reported by the Commission as the value of property, both carrier and non-carrier, of the Company and its subsidiaries, not including the Chicago, St. Paul, Minneapolis and Omaha Railway, as of June 30, 1917, is $565,158,479.00.

The general rate level in the territory served remains out of line with other sections of the country, although strenuous efforts have been and are still being made to adjust this abnormal situation.

Capital Stock

Pursuant to resolution adopted by the Board of Directors on January 13, 1925, subsequently ratified and approved by the Stockholders, providing for an issue of common stock in exchange for the preferred and common stocks of the Chicago, Saint Paul, Minneapolis, and Omaha Railway Company, the common stock and scrip of this Company was increased $11,586,528.56 during the year by the issuance of that amount in exchange for 43,254 shares of the preferred stock and 71,378 shares of the common stock of the Chicago, St. Paul, Minneapolis and Omaha Railway Company on the basis of three shares of North Western common for two shares of Omaha preferred, and five shares of North Western common for seven shares of Omaha common.

The only other change during the year in the Capital Stock was the purchase by the Company of $210.00 of its Common Stock Scrip.

The authorized Capital Stock of the Company is Two Hundred Million Dollars ($200,000,000.00) of which the following has been issued to December 31, 1926:

HELD BY THE PUBLIC:		
Common Stock and Scrip	$156,742,512.38	
Preferred Stock and Scrip	22,395,120.00	
Total Stock and Scrip held by the Public		$179,137,632.38
HELD IN TREASURY:		
Common Stock and Scrip	$2,343,657.15	
Preferred Stock and Scrip	3,834.56	
Total Stock and Scrip held in Treasury		2,347,491.71
Total Capital Stock and Scrip, December 31, 1926		$181,485,124.09

Funded Debt

At the close of the preceding year, the amount of Funded Debt held by the Public was $262,433,000.00

The above amount has been increased by Bonds sold during the year ending December 31, 1926, as follows:

C. & N. W. Ry. General Mortgage Gold of 1987, 4¼%, sold to reimburse the Company for expenditures made in redeeming underlying bonds		18,632,000.00
		$281,065,000.00

And the above amount has been decreased during the year ending December 31, 1926, by Bonds and Equipment Trust Certificates redeemed as follows:

C. & N. W. Ry. Extension Bonds of 1886, 4% (including $29,000.00 unpresented and transferred to "Current Liabilities")	$18,632,000.00	
M. L. S. & W. Ry. Extension and Improvement Sinking Fund Mortgage 5%	73,000.00	
C. & N. W. Ry. Sinking Fund of 1879, 6%	27,000.00	
C. & N. W. Ry. Sinking Fund of 1879, 5%	138,000.00	
C. & N. W. Ry. Sinking Fund Debentures of 1933, 5%	130,000.00	
Princeton and North Western Ry. First Mortgage, 3½%	2,100,000.00	
Peoria and North Western Ry. First Mortgage, 3½%	2,125,000.00	
C. & N. W. Ry. Equipment Gold Notes of 1920, 6%	664,900.00	
C. & N. W. Ry. Equipment Trust Certificates of 1920, 6½%:		
Series "J"	$186,000.00	
Series "K"	267,000.00	
	453,000.00	
C. & N. W. Ry Equipment Trust Certificates of 1922, 5%:		
Series "M"	$345,000.00	
Series "N"	317,000.00	
	662,000.00	
C. & N. W. Ry. Equipment Trust Certificates of 1923, 5%:		
Series "O"	$412,000.00	
Series "P"	104,000.00	
	516,000.00	
Total Funded Debt Redeemed		25,520,900.00
Leaving Funded Debt held by the Public, December 31, 1926		$255,544,100.00

Bonds in the Treasury and Due from Trustee

At the close of the preceding year the amount of the Company's unpledged Bonds and Equipment Trust Certificates in the Treasury and Due from Trustee was $19,035,000.00

The above amount has been increased during the year ending December 31, 1926, as follows:

C. & N. W. Ry. General Mortgage Gold Bonds of 1987, due from Trustee, in exchange for bonds redeemed during the year		154,000.00
Other bonds redeemed during the year exchangeable for C. & N. W. Ry. General Mortgage Gold Bonds of 1987, viz.:		
M. L. S. & W. Ry. Extension and Improvement Sinking Fund Mortgage, 5%	$73,000.00	
C. & N. W. Ry. Sinking Fund of 1879, 6%	27,000.00	
C. & N. W. Ry. Sinking Fund of 1879, 5%	54,000.00	
C. & N. W. Ry. Sinking Fund Debentures of 1933, 5%	60,000.00	
		214,000.00
C. & N. W. Ry. General Mortgage Gold Bonds of 1987, due from Trustee, on account of Construction Expenditures made during the year		1,000,000.00
C. & N. W. Ry. First and Refunding Mortgage Bonds, 5%, received from Trustee, as follows:		
Account Construction Expenditures	$14,000,000.00	
In exchange for Princeton and North Western Ry. First Mortgage Bonds retired	2,100,000.00	
In exchange for Peoria and North Western Ry. First Mortgage Bonds retired	2,125,000.00	
		18,225,000.00
		$38,628,000.00

And the above amount has been decreased during the year ending December 31, 1926, as follows:

C. & N. W. Ry. Equipment Trust Certificates of 1913, 4½%, matured and cancelled:		
Series "E"	$485,000.00	
Series "F"	115,000.00	
C. & N. W. Ry. Equipment Trust Certificates of 1917, 5%, matured and cancelled:		
Series "G"	422,000.00	
Series "H"	400,000.00	
Series "I"	178,000.00	
C. & N. W. Ry. Equipment Trust Certificates of 1920, 6½%, matured and cancelled:		
Series "L"	187,000.00	
C. & N. W. Ry. Equipment Trust Certificates of 1925, 4½%, matured and cancelled:		
Series "O"	361,000.00	
		2,148,000.00
Total Bonds in the Treasury and due from Trustee, December 31, 1926, unpledged		$36,480,000.00

The following bonds owned by the Company are pledged as security for the C. & N. W. Ry. 10-Year Secured Gold Bonds and C. & N. W. Ry. 15-Year Secured Gold Bonds:

C. & N. W. Ry. General Mortgage Gold of 1987, 5%	$20,500,000.00
C. & N. W. Ry. First and Refunding Mortgage, 6%	15,000,000.00
Total December 31, 1926, pledged	$35,500,000.00

Lands

During the year ending December 31, 1926, 20,752.71 acres and 133 town lots of the Company's Land Grant lands were sold for the total consideration of $378,388.14. The number of acres remaining in the several Grants December 31, 1926, amounted to 148,559.77 acres, of which 3,173.66 acres were under contract for sale, leaving unsold 145,386.11 acres.

The Board gratefully acknowledges its appreciation of the loyal and efficient services rendered by officers and employes during the year.

By order of the Board of Directors.

FRED W. SARGENT,
President.

Chicago, April 12, 1927.

Comparative Statement of Income Account

	Year Ending December 31, 1925	Year Ending December 31, 1926	Increase or Decrease
Average mileage of road operated	8,467.56	8,458.91	—8.65
OPERATING REVENUES:			
Freight	$104,888,463.38	$110,229,474.60	$5,341,011.22
Passenger	26,769,125.98	26,592,517.32	—176,608.66
Other Transportation	13,872,945.75	14,288,344.85	415,399.10
Incidental	3,007,734.02	3,225,387.37	217,653.35
Total Operating Revenues	$148,538,269.13	$154,335,724.14	$5,797,455.01
OPERATING EXPENSES:			
Maintenance of Way and Structures	$20,988,336.60	$23,290,735.95	$2,302,399.35
Maintenance of Equipment	30,613,191.90	31,917,474.48	1,304,282.58
Traffic	2,143,148.71	2,453,744.30	310,595.59
Transportation	56,955,609.91	58,127,865.55	1,172,255.64
Miscellaneous Operations	1,067,958.57	1,081,255.15	13,296.58
General	4,095,019.55	4,075,241.37	—19,778.18
Transportation for Investment—Cr.	Cr. 237,209.66	Cr. 357,933.35	—120,723.69
Total Operating Expenses	$115,626,055.58	$120,588,383.45	$4,962,327.87
Net Revenue from Railway Operations	$32,912,213.55	$33,747,340.69	$835,127.14
RAILWAY TAX ACCRUALS	$10,004,224.15	$9,278,362.96	—725,861.19
UNCOLLECTIBLE RAILWAY REVENUES	46,872.54	39,530.45	—7,342.09
Total	$10,051,096.69	$9,317,893.41	—733,203.28
Railway Operating Income	$22,861,116.86	$24,429,447.28	$1,568,330.42

EQUIPMENT AND JOINT FACILITY RENTS:			
Net Debit	1,752,367.24	2,134,308.09	381,940.85
Net Railway Operating Income	$21,108,749.62	$22,295,139.19	$1,186,389.57
NONOPERATING INCOME:			
Rental Income	$694,685.21	$798,083.19	$103,397.98
Dividend Income	1,050,047.00	1,383,404.72	333,357.72
Income from Funded Securities	15,627.38	34,243.00	18,615.62
Income from Unfunded Securities and Accounts, and Other Items	555,886.90	489,671.98	—66,214.92
Total Nonoperating Income	$2,316,246.49	$2,705,402.89	$389,156.40
Gross Income	$23,424,996.11	$25,000,542.08	$1,575,545.97
DEDUCTIONS FROM GROSS INCOME:			
Rental Payments	$41,681.04	$10,286.96	—31,394.08
Interest on Funded Debt	12,425,298.31	12,406,812.11	—18,486.20
Other Deduction	173,438.74	163,601.68	—9,837.06
Total Deductions	$12,640,418.09	$12,580,700.75	—59,717.34
Net Income	$10,784,578.02	$12,419,841.33	$1,635,263.31
DIVIDENDS:			
On Preferred Stock (7%)	$1,567,650.00	$1,567,650.00	.....
On Common Stock (4%)	5,806,100.00	6,243,250.00	$437,150.00
Total Dividends	$7,373,750.00	$7,810,900.00	$437,150.00
Balance Income for the Year, carried to Profit and Loss	$3,410,828.02	$4,608,941.33	$1,198,113.31

Profit and Loss—December 31, 1926

Dr.

CHARGES FOR THE YEAR ENDING DECEMBER 31, 1926:	
Depreciation accrued prior to July 1, 1907, on equipment retired or changed from one class to another	$ 346,281.54
Net loss on property sold or abandoned and not replaced	457,634.16
Debt discount incurred during the year extinguished through surplus	81,641.15
Credit Balance, December 31, 1926, carried to Balance Sheet	66,545,610.81
	$67,431,167.66

Cr.

Credit Balance, December 31, 1925	$62,031,847.15
CREDITS FOR THE YEAR ENDING DECEMBER 31, 1926:	
Credit Balance of current year's Income, brought forward from Income Account	4,608,941.33
Net profit from sale of Land Grant lands	363,065.69
Net Miscellaneous Credits	427,313.49
	$67,431,167.66

Comparative General Balance Sheet

(8,386.94 Miles)

December 31, 1925	ASSETS.	December 31, 1926
	INVESTMENTS.	
$500,270,664.09	Investment in Road and Equipment	$509,950,301.80
986,435.92	Miscellaneous Physical Property	874,529.57
2,314,955.01	Investment in Affiliated Companies	2,183,335.79
	Investment in Other Companies:	
10,337,152.29	Capital Stock of Chicago, St. Paul, Minneapolis and Omaha Ry. Co. (149,200 Shares), acquired by purchase	10,337,152.29
.....	Capital Stock of Chicago, St. Paul, Minneapolis and Omaha Ry. Co. (114,632 Shares), acquired in exchange for C. & N. W. Ry. Co. Common Stock	11,586,528.56
3,910,575.93	Preferred Stock of Union Pacific Railroad Company (41,715 Shares)	3,910,575.93
245,017.50	Miscellaneous	220,642.50
82,743.80	Other Investments	538,992.12
$518,147,544.54	Total Investments	$539,602,258.56
	CURRENT ASSETS.	
$16,190,318.01	Cash	$7,430,401.67
70,000.00	Loans and Bills Receivable	70,000.00
773,249.40	Traffic and Car Service Balances Receivable	440,528.79
2,724,771.47	Net Balance Receivable from Agents and Conductors	2,684,797.25
3,921,647.24	Miscellaneous Accounts Receivable	4,824,106.32
13,530,679.16	Material and Supplies	13,509,202.23
316,491.39	Other Current Assets	268,413.01
$37,527,156.67	Total Current Assets	$29,227,449.27
	UNADJUSTED DEBITS.	
.....	Advances account Equipment Purchased under Trust Agreements	$30,366.93
$2,347,281.71	Capital Stock and Scrip, C. & N. W. Ry. Co., Held in Treasury	2,347,491.71
	Company Bonds Held in Treasury and Due from Trustee:	
19,035,000.00	Unpledged	36,480,000.00
35,500,000.00	Pledged	35,500,000.00
2,124,237.99	Other Unadjusted Debits	2,460,770.67
$59,006,519.70	Total Unadjusted Debits	$76,818,629.31
$614,681,220.91	Total Assets	$645,648,337.14

December 31, 1925	LIABILITIES.	December 31, 1926
	CAPITAL STOCK.	
$167,551,313.82	Held by Public	$179,137,632.38
2,347,281.71	Held in Treasury	2,347,491.71
$169,898,595.53	Total Capital Stock	$181,485,124.09
29,657.75	Premium Realized on Capital Stock	29,657.75
$169,928,253.28	Total Capital Stock and Premium	$181,514,781.84
	LONG TERM DEBT.	
$262,433,000.00	Funded Debt Held by the Public	$255,544,100.00
	Funded Debt Held in Treasury and Due from Trustee:	
19,035,000.00	Unpledged	36,480,000.00
35,500,000.00	Pledged	35,500,000.00
$316,968,000.00	Total Long Term Debt	$327,524,100.00
	CURRENT LIABILITIES.	
$ 3,994,639.31	Traffic and Car Service Balances Payable	$ 4,211,240.33
5,909,876.71	Audited Accounts and Wages Payable	6,509,348.01
337,448.10	Miscellaneous Accounts Payable	323,138.56
816,875.34	Interest Matured Unpaid	757,060.84
7,314.70	Dividends Matured Unpaid	10,549.20
2,342,482.05	Unmatured Interest Accrued	2,135,462.46
289,802.46	Other Current Liabilities	364,667.91
$ 13,698,438.67	Total Current Liabilities	$ 14,311,467.31
	UNADJUSTED CREDITS.	
$ 7,278,737.00	Tax Liability	$ 7,135,689.00
525,666.45	Balance Premium on C. & N. W. Ry. 5% General Mortgage Gold Bonds of 1987	515,995.26
41,135,988.56	Accrued Depreciation—Equipment	44,259,584.66
614,985.92	Other Unadjusted Credits	1,233,080.40
$ 49,555,377.93	Total Unadjusted Credits	$ 53,144,349.32
	CORPORATE SURPLUS.	
$ 2,499,303.88	Additions to Property Through Surplus	$ 2,608,027.86
62,031,847.15	Profit and Loss	66,545,610.81
$ 64,531,151.03	Total Corporate Surplus	$ 69,153,638.67
$614,681,220.91	Total Liabilities	$645,648,337.14

Forty-Fifth Annual Report of the Chicago, Saint Paul, Minneapolis and Omaha Railway Company

Year Ended December 31, 1926

Report of the Board of Directors

To the Stockholders of the Chicago, Saint Paul, Minneapolis and Omaha Railway Company:

The Board of Directors submits herewith its report of the operations and affairs of the Company for the year ended December 31, 1926.

Mileage of road operated 1,746.53

OPERATING REVENUES:		
Freight	$19,348,006.14	
Passenger	4,937,997.37	
Other Transportation	1,793,734.50	
Incidental	353,281.00	
		$26,433,019.01
OPERATING EXPENSES:		
Maintenance of Way and Structures	$ 3,793,837.07	
Per Cent of Operating Revenues	14.35	
Maintenance of Equipment	4,888,977.57	
Per Cent of Operating Revenues	18.50	
Traffic	415,433.65	
Per Cent of Operating Revenues	1.57	
Transportation	11,174,461.02	
Per Cent of Operating Revenues	42.27	
Miscellaneous Operations	140,320.06	
Per Cent of Operating Revenues	.53	
General	907,777.20	
Per Cent of Operating Revenues	3.44	
Transportation for Investment—Cr.	47,857.88	
Per Cent of Operating Revenues	.18	
		21,272,948.69
Per Cent of Operating Revenues		80.48
Net revenue from railway operation		$5,160,070.32

Net Revenue from Railway Operations, forward		$ 5,160,070.32
Railway Tax Accruals	$ 1,274,029.01	
Per Cent of Operating Revenues	4.82	
Uncollectible Railway Revenues	12,843.83	
		1,286,872.84
Railway Operating Income		$ 3,873,197.48
Equipment and Joint Facility Rents—Net Debit		693,108.38
Net Railway Operating Income		$ 3,180,089.10
Nonoperating Income:		
Rental Income	$ 55,141.94	
Dividend Income	38,584.88	
Income from Funded Securities	5,579.51	
Income from Unfunded Securities and Accounts, and Other Items	100,427.20	
		199,733.53
Gross Income		$ 3,379,822.63
Deductions from Gross Income:		
Rental Payments	$ 1,747.77	
Interest on Funded Debt	2,530,882.34	
Other Deductions	37,450.48	
		2,570,080.59
Net Income		$ 809,742.04
Dividends:		
5% on Preferred Stock		562,965.00
Balance Income for the year		$ 246,777.04

The freight revenues for the year decreased $218,916.78 or 1.12 per cent, as compared with the preceding year. The loss in revenue from transportation of grain alone was more than twice the amount of this decrease, and supplementing it was a relatively similar decrease attributable to flour and other mill products. Commodities other than these and products of forests, contributed generally to an increase.

A further decrease of 5.63 per cent, amounting to $294,629.10, was suffered in passenger revenues. As for several years past, this decrease is located in the short haul business and is in proportion to the increase in mileage of improved highways paralleling and adjacent to the railway, and the increased passenger motor vehicle registration.

To meet, so far as might be possible, the loss in revenues amounting to $417,114.23 the Company reduced its operating expenses $207,759.71 or .97 per cent, as compared with 1925. This reduction, however, was effected in expenses other than those of Maintenance of Way and Structures, charges on account of which increased $189,310.88, as compared with 1925. Charges for ties, rails, other track material and ballast, together with the labor cost of application in track accounted for $145,034.77 of this increase.

Charges for Maintenance of Equipment decreased $92,305.66. The decrease of 2.28 per cent, in locomotive repairs when compared with the decrease in locomotive miles of 2.08 per cent, and decrease in locomotives owned of 2.07 per cent, indicates that the standard of locomotive maintenance was not lowered. Passenger and freight train cars likewise received the same degree of maintenance as in the preceding year.

Further economies in Transportation Expenses resulted in a decrease of $297,673.77 as compared with 1925, as well as a reduction in ratio to operating revenues of .46 per cent.

Capital Stock

There has been no change since the close of the preceding year in the Capital Stock and Scrip of the Company.

The Company's authorized Capital Stock is Fifty Million Dollars ($50,000,000), of which the following has been issued to December 31, 1926.

Outstanding:		
Common Stock and Scrip	$18,559,086.69	
Preferred Stock and Scrip	11,259,859.09	
		$29,818,945.78
Owned by the Company:		
Common Stock and Scrip	$ 2,844,206.64	
Preferred Stock and Scrip	1,386,974.20	
		4,231,180.84
Total Capital Stock and Scrip, December 31, 1926		$34,050,126.62

Funded Debt

At the close of the preceding year the amount of Funded Debt, held by the Public, was $46,444,000.00

The above amount has been decreased during the year ended December 31, 1926, by Equipment Trust Certificates redeemed, as follows:

Chicago, Saint Paul, Minneapolis and Omaha Railway Equipment Gold Notes, 6%, redeemed	$ 156,800.00	
Chicago, Saint Paul, Minneapolis and Omaha Railway Equipment Trust Certificates of 1917, Series "A," 7%, redeemed	110,000.00	
Chicago, Saint Paul, Minneapolis and Omaha Railway Equipment Trust Certificates of 1917, Series "B," 7%, redeemed	95,000.00	
		361,800.00

Leaving Funded Debt, held by the Public, December 31, 1926 ..... $46,082,200.00

The Board desires to express its appreciation to the officers and employees of the Company for their loyal and efficient service during the year.

By order of the Board of Directors.

Fred W. Sargent,
President.

Chicago, April 13, 1927.

Comparative General Balance Sheet

(1,676.71 miles)

December 31, 1925	ASSETS.	December 31, 1926
	Investments.	
$ 88,503,172.39	Investment in Road and Equipment	$ 89,391,063.86
588,670.41	Miscellaneous Physical Property	544,237.46
370,654.99	Investment in Affiliated Companies	385,302.99
7,847.41	Other Investments	11,492.74
$ 89,470,345.20	Total Investments	$ 90,332,097.05
	Current Assets.	
$ 1,102,530.16	Cash	$ 563,333.39
94,649.25	Traffic and Car Service Balances Receivable	50,634.71
478,044.79	Net Balance Receivable from Agents and Conductors	462,781.08
838,198.08	Miscellaneous Accounts Receivable	796,226.40
2,256,367.96	Material and Supplies	2,392,443.11
$ 4,769,790.24	Total Current Assets	$ 4,265,418.69
	Unadjusted Debits.	
$ 96,301.12	Discount on Funded Debt	$ 73,230.55
2,844,206.64	Common Stock and Scrip, C. St. P. M. & O. Ry. Co., Held in Treasury	2,844,206.64
1,386,974.20	Preferred Stock and Scrip, C. St. P. M. & O. Ry. Co., Held in Treasury	1,386,974.20
	Equipment Trust Certificates of 1917 Series "C", Held in Treasury	410,000.00
634.09	Consolidated Mortgage Bond Scrip Due from Central Union Trust Company	634.09
427,467.42	Other Unadjusted Debits	432,416.40
$ 4,755,583.47	Total Unadjusted Debits	$ 5,147,461.88
$ 98,995,718.91	Total Assets	$ 99,744,977.62

December 31, 1925	LIABILITIES.	December 31, 1926
	Capital Stock.	
$ 29,818,945.78	Held by Public	$ 29,818,945.78
4,231,180.84	Held in Treasury	4,231,180.84
$ 34,050,126.62	Total Capital Stock	$ 34,050,126.62
	Long Term Debt.	
$ 46,444,000.00	Funded Debt Held by the Public	$ 46,082,200.00
634.09	Equipment Trust Certificates and Scrip Owned by the Company	410,634.09
$ 46,444,634.09	Total Long Term Debt	$ 46,492,834.09
	Current Liabilities.	
$ 891,869.11	Traffic and Car Service Balances Payable	$ 894,201.38
1,646,157.65	Audited Accounts and Wages Payable	2,327,871.66
137,395.96	Miscellaneous Accounts Payable	95,942.05
56,833.50	Interest Matured Unpaid	56,983.50
72.50	Dividends Matured Unpaid	4,072.50
434,195.83	Unmatured Interest Accrued	429,292.17
500.00	Funded Debt Matured Unpaid	500.00
$ 3,167,024.55	Total Current Liabilities	$ 3,808,863.26
	Unadjusted Credits.	
$ 618,830.52	Tax Liability	$ 432,559.40
139,362.68	Premium on Funded Debt	107,506.90
7,073,691.02	Accrued Depreciation—Equipment	7,397,495.52
295,498.29	Other Unadjusted Credits	340,595.20
$ 8,127,382.51	Total Unadjusted Credits	$ 8,278,157.02
	Corporate Surplus.	
$ 1,197,897.10	Additions to Property Through Surplus	$ 1,174,736.97
6,008,654.04	Profit and Loss	5,940,259.66
$ 7,206,551.14	Total Corporate Surplus	$ 7,114,996.63
$ 98,995,718.91	Total Liabilities	$ 99,744,977.62

Union Pacific Railroad Company
Thirtieth Annual Report—Year Ended December 31, 1926

NEW YORK, N. Y., April 14, 1927.

TO THE STOCKHOLDERS OF UNION PACIFIC RAILROAD COMPANY:

The Board of Directors submits the following report of the operations and affairs of the Union Pacific Railroad Company for the calendar year ended December 31, 1926, *including* the Oregon Short Line Railroad Company, whose entire Capital Stock is owned by the Union Pacific Railroad Company, the Oregon-Washington Railroad & Navigation Company, whose entire Capital Stock (except fifteen qualifying shares held by Directors) is owned by the Oregon Short Line Railroad Company, and the Los Angeles & Salt Lake Railroad Company, whose entire Capital Stock is owned, one-half each, by the Union Pacific Railroad Company and the Oregon Short Line Railroad Company. For convenience, the four companies are designated by the term "UNION PACIFIC SYSTEM."

Mileage and Income

The operated mileage at close of year and income for the calendar year 1926, compared with 1925, *after excluding all offsetting accounts between the Union Pacific Railroad Co., Oregon Short Line Railroad Co., Oregon-Washington Railroad & Navigation Co., and Los Angeles & Salt Lake Railroad Company*, were as follows:

The increase of $7,835,272.72 or 5.2% in "Freight Revenue" was due to an increase of 6.2 per cent in net ton miles of revenue freight carried (including freight carried by one System company for another on which freight charges must be assessed under the Interstate Commerce Law), partially offset by a decrease of .8 per cent in average revenue per ton mile caused by fluctuations in the kinds of commodities hauled, the level of freight rates being substantially the same as last year. There were substantial increases in the transportation of grain, fruits, vegetables and other agricultural products, particularly of wheat and potatoes, due chiefly to a large hold-over of 1925 wheat in Idaho, Oregon and Washington and improved wheat crops in Nebraska, Kansas and Colorado, and to favorable yields of fruits and vegetables in the States west of the Rocky Mountains; although the movement of California grapes decreased substantially because a large crop in the East lessened the demand for the California product and a short crop of sugar beets in Idaho and Utah resulted in a decrease in the transportation of that commodity. Improved financial conditions in the agricultural districts stimulated purchasing, particularly of agricultural implements, which moved in greater volume than last year. Further developments in the oil industry in Kansas, Colorado and Wyoming and the construction of a breakwater at Long Beach, California, resulted in heavier movements of crude petroleum and stone, respectively. The movement of gasoline increased substantially because of mild weather conditions during the winter

	Calendar Year 1926	Calendar Year 1925	Increase	Decrease
Operated Mileage at Close of Year.				
Miles of road	9,676.55	9,555.39	121.16	
Miles of additional main track	1,518.88	1,493.65	25.23	
Miles of yard tracks and sidings	3,800.54	3,732.73	67.81	
Total Mileage Operated	14,995.97	14,781.77	214.20	
Transportation Operations.				
Operating Revenues	$205,416,263.52	$198,039,900.87	$7,376,362.65	
Operating Expenses	140,769,540.31	138,842,479.79	1,927,060.52	
Revenues over Expenses	$64,646,723.21	$59,197,421.08	$5,449,302.13	
Taxes	15,725,933.06	13,462,881.36	2,263,051.70	
Uncollectible Railway Revenues	13,950.91	15,241.29		$1,290.38
Railway Operating Income	$48,906,839.24	$45,719,298.43	$3,187,540.81	
Rents from use of joint tracks, yards, and terminal facilities	1,371,230.91	1,319,633.31	51,597.60	
	$50,278,070.15	$47,038,931.74	$3,239,138.41	
Hire of equipment—debit balance	$6,028,219.60	$4,809,333.96	$1,218,885.64	
Rents from use of joint tracks, yards, and terminal facilities	2,149,707.51	2,190,952.32		$41,244.81
	$8,177,927.11	$7,000,286.28	$1,177,640.83	
Net Income from Transportation Operations	**$42,100,143.04**	**$40,038,645.46**	**$2,061,497.58**	
Income from Investments and Sources other than Transportation Operations.				
Dividends on stocks owned	$8,893,880.25	$8,725,895.00	$167,985.25	
Interest on bonds, notes, and equipment trust certificates owned	5,909,970.54	6,103,126.71		$193,156.17
Interest on loans and open accounts—balance	1,271,990.88	610,413.49	661,577.39	
Rents from lease of road	122,020.26	121,529.81	490.45	
Miscellaneous rents	551,686.53	557,998.74		6,312.21
Miscellaneous income	380,115.11	420,734.18		40,619.07
Total	$17,129,663.57	$16,539,697.93	$589,965.64	
Total Income	$59,229,806.61	$56,578,343.39	$2,651,463.22	
Fixed and Other Charges.				
Interest on funded debt	$17,794,133.79	$17,884,893.11		$90,759.32
Miscellaneous rents	26,841.56	36,568.04		9,726.48
Miscellaneous charges	424,082.08	425,821.86		1,739.78
Total	$18,245,057.43	$18,347,283.01		$102,225.58
Net Income from All Sources	**$40,984,749.18**	**$38,231,060.38**	**$2,753,688.80**	

DISPOSITION OF NET INCOME

Dividends on Stock of Union Pacific Railroad Co.:			
Preferred stock:			
2 per cent paid April 1, 1926	$1,990,870.00		
2 per cent paid October 1, 1926	1,990,870.00	$3,981,740.00	$3,981,740.00
Common stock:			
2½ per cent paid April 1, 1926	$5,557,290.00		
2½ per cent paid July 1, 1926	5,557,290.00		
2½ per cent paid October 1, 1926	5,557,290.00		
2½ per cent payable January 3, 1927	5,557,290.00	22,229,160.00	22,229,160.00
Total Dividends		$26,210,900.00	$26,210,900.00
Sinking Fund Requirements		5,676.64	18,681.03	$13,004.39
Total Appropriations of Net Income		$26,216,576.64	$26,229,581.03	$13,004.39
Surplus, Transferred to Profit and Loss		**$14,768,172.54**	**$12,001,479.35**	**$2,766,693.19**

months permitting of unrestricted use of automobiles with a consequent increase in gasoline consumption, and because of a steady demand during the other months of the year. The mild weather conditions caused also a substantial reduction in shipments of bituminous coal.

The decrease of $1,418,416.86 or 4.6% in "Passenger Revenue" was due to decrease of 6.4 per cent in revenue passengers carried one mile, partially offset by increase of 1.9 per cent in average revenue per passenger mile. The decrease in revenue passengers carried one mile was principally occasioned by the continued diversion of local short-haul business to motor vehicles and by fewer conventions being held on the Pacific Coast, with a resultant reduction in transcontinental travel. The lesser number of popular low-rate excursions conducted in 1926 resulted in an increase in average revenue per passenger mile.

The increase of $623,338.15 or 17.8% in "Express Revenue" was due principally to a greater carload movement by express of fruits and vegetables from California, Oregon and Washington points to Eastern destinations. There was also an increase in less than carload express traffic.

The increase of $143,622.49 or 3.6% in "Other Passenger Train Revenue" was due principally to an increase in milk and cream traffic handled in baggage service.

The increase of $215,563.87 or .8% in "Maintenance of Way and Structures Expenses" was due to ordinary fluctuations in repairs and renewals and in care of roadbed.

The principal track materials used during the year in making renewals were as follows:

New steel rails	352.47 track miles
Second-hand steel rails	82.34 " "
Total	434.81 track miles

excluding yard tracks and sidings, equivalent to 4.2 per cent of the track miles in main track at the beginning of the year. Ties 2,974,554 (98.2 per cent treated), equivalent to 7.8 per cent of all ties in track at the beginning of the year. Tie plates 2,164,064 and continuous rail joints 186,546.

The increase of $1,318,315.02 or 3.6% in "Maintenance of Equipment Expenses" was due principally to heavy repairs to locomotives and freight-train cars because of increased use resulting from improvement in traffic. Freight car mileage increased 6.4 per cent and both freight and passenger locomotive mileage increased slightly.

The increase of $427,969.84 or 10.4% in "Traffic Expenses" was principally due to increase in expenditures for advertising and solicitation.

The decrease of $450,940.24 or .8% in "Transportation Expenses—Rail Line" was due to decrease of $955,000 in prices of fuel consumed by locomotives, offset partially by increases in engine and train crews and in station forces. There was an increase of 5.4 per cent in tons of revenue freight hauled, together with a 7.2 per cent increase in freight gross ton miles. This traffic was moved with only .9 per cent more freight train miles because of an increase of 6.3 per cent in the average train loading. Although there was an increase of 1.7 per cent in total transportation locomotive miles, the consumption in tons of fuel by locomotives was practically the same as last year.

The increase of $380,431.68 or 5.6% in "General Expenses" was due principally to increase in wages, pension payments and amount of premium payments on employes' group insurance.

The table shows analysis by classes of the increase of $2,263,051.70 or 16.8% in "Taxes." The increase in Federal income tax resulted from increase in taxable income for 1926 over 1925 and increase in tax rate under the "Revenue Act of 1926" from 12½ to 13½ per cent for the year 1926 and from 12½ to 13 per cent retroactive for the year 1925. The increase in State and

Operating results for year 1926 compared with year 1925:

	Calendar Year 1926	Calendar Year 1925	Increase	Decrease	Per Cent.
Average miles of road operated	9,647.04	9,547.76	99.28	.....	1.0
Operating Revenues					
1. Freight revenue	$157,841,014.51	$150,005,741.79	$7,835,272.72	.....	5.2
2. Passenger revenue	29,674,038.54	31,092,455.40	.....	$1,418,416.86	4.6
3. Mail revenue	4,431,818.86	4,411,819.27	19,999.59	.....	.5
4. Express revenue	4,128,205.42	3,504,867.27	623,338.15	.....	17.8
5. Other passenger-train revenue	4,088,970.19	3,945,347.70	143,622.49	.....	3.6
6. Other train revenue	67,912.24	56,104.99	11,807.25	.....	21.0
7. Switching revenue	1,261,886.37	1,173,187.41	88,698.96	.....	7.6
8. Water line revenue	55,371.64	36,971.05	18,400.59	.....	49.8
9. Other revenue	3,867,045.75	3,813,405.99	53,639.76	.....	1.4
10. Total operating revenues	$205,416,263.52	$198,039,900.87	$7,376,362.65	.....	3.7
Operating Expenses					
11. Maintenance of way and structures	$28,160,940.03	$27,945,376.16	$215,563.87	.....	.8
12. Maintenance of equipment	38,010,184.42	36,691,869.40	1,318,315.02	.....	3.6
13. Total maintenance expenses	$66,171,124.45	$64,637,245.56	$1,533,878.89	.....	2.4
14. Traffic expenses	4,529,212.43	4,101,242.59	427,969.84	.....	10.4
15. Transportation expenses—rail line	58,587,843.01	59,038,783.25	.....	$450,940.24	.8
16. Transportation expenses—water line	50,349.38	51,587.04	.....	1,237.66	2.4
17. Miscellaneous operations expenses	4,247,562.12	4,197,810.06	49,752.06	.....	1.2
18. General expenses	7,233,491.01	6,853,059.33	380,431.68	.....	5.6
19. Transportation for investment—*Credit*	50,042.09	37,248.04	12,794.05	.....	34.3
20. Total operating expenses	$140,769,540.31	$138,842,479.79	$1,927,060.52	.....	1.4
21. Revenues over expenses	$64,646,723.21	$59,197,421.08	$5,449,302.13	.....	9.2
Taxes					
22. State and county	$10,903,677.65	$10,186,120.95	$717,556.70	.....	7.0
23. Federal capital stock	303,566.50	593,817.66	.....	$290,251.16	48.9
24. Federal income	4,514,978.51	2,681,727.00	1,833,251.51	.....	68.4
25. All other federal	3,710.40	1,215.75	2,494.65	.....	205.2
26. Total taxes	$15,725,933.06	$13,462,881.36	$2,263,051.70	.....	16.8
27. Uncollectible railway revenues	$13,950.91	$15,241.29	.....	$1,290.38	8.5
28. Railway operating income	$48,906,839.24	$45,719,298.43	$3,187,540.81	.....	7.0
29. Equipment rents (debit)	6,028,219.60	4,809,333.96	1,218,885.64	.....	25.3
30. Joint facility rents (debit)	778,476.60	871,319.01	.....	$92,842.41	10.7
31. Net railway operating income	$42,100,143.04	$40,038,645.46	$2,061,497.58	.....	5.1
Per cent—Operating expenses of operating revenues	68.53	70.11	.....	1.58	2.3
Freight Traffic (*Commercial Freight only*)					
Tons of revenue freight carried	34,534,148	32,770,901	1,763,247	.....	5.4
Ton-miles, revenue freight	13,211,549,913	12,444,146,082	767,403,831	.....	6.2
Average distance hauled per ton (*miles*)	382.56	379.73	2.83	.....	.7
Average revenue per ton-mile (*cents*)	1.178	1.188	.....	.010	.8
Average revenue per freight-train mile	$7.51	$7.20	$.31	.....	4.3
Passenger Traffic (*Excluding Motor Car and Motor Coach*)					
Revenue passengers carried	4,004,975	4,638,102	.....	633,127	13.7
Revenue passengers carried one mile	983,163,679	1,050,052,344	.....	66,888,665	6.4
Average distance hauled per passenger (*miles*)	245.49	226.40	19.09	.....	8.4
Average passengers per passenger-train mile	51.27	55.98	.....	4.71	8.4
Average revenue per passenger-mile (*cents*)	2.982	2.926	.056	.....	1.9
Average revenue per passenger-train mile, passengers only	$1.53	$1.64	.....	$.11	6.7
Average total revenue per passenger-train mile	$2.18	$2.27	.....	$.09	4.0

county taxes was due to increased assessments on account of additional investment in road and equipment and increased tax levies in several States. The decrease in Federal capital stock tax was due to the abolishment of this tax effective June 30, 1926.

The increase of $1,218,885.64 or 25.3% in "Equipment Rents (Debit)" was principally due to a 23.4 per cent increase in mileage payments on refrigerator cars, there having been a substantial increase in number of carloads of perishable commodities handled.

The *increase in* "Investment in Road and Equipment" is made up as follows:

Extensions and Branches	$1,003,391.35
Additions and Betterments, *excluding Equipment*	9,138,409.57
Equipment	10,184,648.79
Total Increase	$20,326,449.71
From which there was deducted:	
Cost of property retired from service and not to be replaced, *charged (less salvage) to Profit and Loss in conformity with regulations of the Interstate Commerce Commission*	$778,837.01
Cost of real estate retired	81,273.72
Cost of equipment retired from service	1,990,920.46
Total Deductions	2,851,031.19
Net increase in "Investment in Road and Equipment"	$17,475,418.52

There were constructed and opened for operation during the year three small branch lines extending in a southerly direction from the North Platte Branch, as follows: Gering to Riford, Nebraska, 9.14 miles, opened for operation September 24, 1926; Lyman to Sears, Nebraska, 2.71 miles, opened for operation September 23, 1926; and Yoder to Creighton, Wyoming, 8.54 miles, opened for operation October 1, 1926. These lines will serve territory consisting of approximately 65,000 acres of land adapted to the growing of sugar beets and other agricultural products.

A small line extending 2.35 miles from Ripple, Colorado, on the Fort Collins Branch in a general easterly direction to Orcutt, Colorado, was constructed during the year and opened for operation November 14, 1926. The primary purpose of this line is to serve the Union Oil Company in the development of the Wellington Dome oil field. The Oil Company has established headquarters at Orcutt for materials and supplies to be used in development work during the next few years and will construct there an absorption plant for the manufacture of gasoline from a large gas well nearby. It is expected that the line will later

General Balance Sheet—Assets

(Excluding all offsetting securities and accounts between the Union Pacific Railroad Co., Oregon Short Line Railroad Co., Oregon-Washington Railroad & Navigation Co., and Los Angeles & Salt Lake Railroad Co.)

		December 31, 1926	December 31, 1925	Increase	Decrease
Investments:					
	Road and Equipment	$873,669,437.46	$856,194,018.94	$17,475,418.52	
	Less:				
	Receipts from improvement and equipment fund	$23,823,091.13	$23,823,091.13		
	Appropriations from income and surplus prior to July 1, 1907, credited to this account	13,310,236.52	13,310,236.52		
	Total	$37,133,327.65	$37,133,327.65		
701.	**Investment in road and equipment**	**$836,536,109.81**	**$819,060,691.29**	**$17,475,418.52**	
702.	Improvements on leased railway property	$19,019.12	$17,878.73	$1,140.39	
704.	Deposits in lieu of mortgaged property sold	342,430.78	392,235.68		$49,804.90
705.	Miscellaneous physical property	2,262,609.68	2,634,408.99		371,799.31
	Total	$2,624,059.58	$3,044,523.40		$420,463.82
706.	**Investments in affiliated companies:**				
	Stocks	$20,483,584.46	$20,981,719.46		$498,135.00
	Bonds, notes, and equipment trust certificates	23,630,904.87	19,528,843.11	$4,102,061.76	
	Advances	9,023,246.45	8,692,959.81	330,286.64	
	Total	$53,137,735.78	$49,203,522.38	$3,934,213.40	
707.	**Investments in other companies:**				
	Stocks	$89,891,599.93	$90,694,599.93		$803,000.00
	Bonds, notes, and equipment trust certificates	69,997,954.25	71,230,686.05		1,232,731.80
	Total	$159,889,554.18	$161,925,285.98		$2,035,731.80
	United States Government Bonds and Notes	$31,999,543.75	$41,007,488.75		$9,007,945.00
703.	Sinking funds	$194,405.65	$176,519.84	$17,885.81	
	Total Investments	**$1,084,381,406.75**	**$1,074,418,031.64**	**$9,963,377.11**	
Current Assets:					
708.	Cash	$38,972,343.47	$29,031,509.31	$9,940,834.16	
711.	Special deposits	47,479.63	84,862.11		$37,382.48
712.	Loans and bills receivable	1,896.87	6,613.88		4,717.01
713.	Traffic and car service balances receivable	4,736,025.18	5,098,315.38		362,290.20
714.	Net balance receivable from agents and conductors	1,125,914.24	1,264,232.84		138,318.60
715.	Miscellaneous accounts receivable	4,464,115.52	4,592,806.41		128,690.89
716.	Material and supplies	16,118,333.28	16,446,844.10		328,510.82
717.	Interest and dividends receivable	1,663,749.82	1,910,719.44		246,969.62
718.	Rents receivable	163,860.96	148,175.60	15,685.36	
719.	Other current assets:				
	Baltimore and Ohio Railroad Co. capital stock applicable to payment of extra dividend of 1914	138,746.20	159,198.20		20,452.00
	Miscellaneous items	202,475.01	252,319.61		49,844.60
	Total Current Assets	$67,634,940.18	$58,995,596.88	$8,639,343.30	
Deferred Assets:					
720.	Working fund advances	$54,664.06	$56,467.55		$1,803.49
722.	Other deferred assets:				
	Land contracts, as *per contra*	82,692.97	121,833.75		39,140.78
	Miscellaneous items	4,007,684.34	3,667,430.60	$340,253.74	
	Total Deferred Assets	$4,145,041.37	$3,845,731.90	$299,309.47	
Unadjusted Debits:					
723.	Rents and insurance premiums paid in advance	$3,504.66	$2,988.20	$516.46	
725.	Discount on funded debt	1,080,411.78	1,112,110.86		$31,699.08
727.	Other unadjusted debits	1,163,799.94	1,233,072.54		69,272.60
	Total Unadjusted Debits	$2,247,716.38	$2,348,171.60		$100,455.22
	Grand Total	**$1,158,409,106.68**	**$1,139,607,532.02**	**$18,801,574.66**	

develop some traffic in livestock and in products of agriculture.

The branch line from Rogerson, Idaho, to Wells, Nevada, 94.11 miles, was completed and placed in operation February 15, 1926; and the extension of the North Platte Branch from Cottier, Wyoming, northeasterly, 4.05 miles, was completed and placed in operation September 1, 1926.

On June 7, 1923, the Interstate Commerce Commission issued its first "Final Valuation Order" under the Act of 1913 requiring it to value all railroad property in the United States, by which it determined the final value for rate-making purposes as of June 30, 1914, of the properties of the Los Angeles & Salt Lake Railroad Company. In the belief that in its proceedings the Commission had disregarded legal principles, applied erroneous theories and rejected elements of value often recognized by the Supreme Court of the United States, with the result that the value fixed by the order was several million dollars below the amount which the property was worth according to the tests ordinarily applied in determining questions of value, suit was promptly brought in the United States District Court at Los Angeles to cancel and enjoin the order of the Commission establishing such value. After hearing the evidence the Court found that the value of the property greatly exceeded the amount found by the Commission; that there was no "value for rate-making purposes" as found by the Commission but only one value, which was its true, actual value for any and all purposes; and, accordingly, entered a decree setting aside the Commission's order and enjoining its use for any purpose. Thereupon an appeal was taken by the Government and the Commission to the United States Supreme Court where the case was argued on behalf of the company by former Justice Charles E. Hughes. On February 21, 1927, the Supreme Court reversed the decree of the District Court and ordered the suit dismissed upon the ground that the courts have no jurisdiction to review orders of the Commission in valuation proceedings by direct suits of this character brought before such valuations are actually used against the carriers in some rate or other proceeding. The Supreme Court's opinion did not dispose of, or consider, any of the contentions as to the invalidity of the valuation; and it is impossible to forecast the full practical effect of the decision.

For the second consecutive year the Edward H. Harriman Memorial gold medal presented annually by Mrs. E. H. Harriman was awarded on November 24, 1926, by the American Museum of Safety to the Union Pacific System "For the utmost progress in safety and accident prevention during the year 1925."

General Balance Sheet—Liabilities

(Excluding all offsetting securities and accounts between the Union Pacific Railroad Co., Oregon Short Line Railroad Co., Oregon-Washington Railroad & Navigation Co., and Los Angeles & Salt Lake Railroad Co.)

		December 31, 1926	December 31, 1925	Increase	Decrease
751.	**Capital Stock**				
	Common stock	$222,293,100.00	$222,293,100.00	.....	.....
	Preferred stock	99,543,500.00	99,543,500.00	.....	.....
	Total Capital Stock	$321,836,600.00	$321,836,600.00	.....	.....
755.	**Funded Debt**	412,770,925.00	414,893,320.00	.....	$2,122,395.00
	Total	$734,607,525.00	$736,729,920.00	.....	$2,122,395.00
754.	**Grants in Aid of Construction**	$379,809.26	$300,777.47	$79,031.79†	.....
	Current Liabilities:				
759.	Traffic and car service balances payable	$1,695,160.90	$1,839,806.88	.....	$144,645.98
760.	Audited accounts and wages payable	10,900,860.05	12,378,039.06	.....	1,477,179.01
761.	Miscellaneous accounts payable:				
	Due to affiliated companies	9,876,159.43	10,161,116.56	.....	284,957.13
	Other accounts payable	158,739.10	278,888.42	.....	120,149.32
762.	Interest matured unpaid:				
	Coupons matured, but not presented	145,484.95	153,821.35	.....	8,336.40
	Coupons, and interest on registered bonds, due first proximo	5,049,435.30	5,081,874.90	.....	32,439.60
763.	Dividends matured unpaid:				
	Dividends due, but uncalled for	118,763.00	115,380.50	$3,382.50	.....
	Extra dividend on common stock declared January 8, 1914, payable to stockholders of record March 2, 1914, unpaid	148,973.63	171,343.28	.....	22,369.63
	Dividend on common stock payable first proximo	5,557,290.00	5,557,290.00	.....	.....
764.	Funded debt matured unpaid	39,000.00	5,000.00	34,000.00	.....
766.	Unmatured interest accrued	1,683,888.39	1,688,660.75	.....	4,772.36
767.	Unmatured rents accrued	506,724.82	480,218.24	26,506.58	.....
768.	Other current liabilities	145,480.64	185,271.33	.....	39,790.69
	Total Current Liabilities	$36,025,960.23	$38,096,711.27	.....	$2,070,751.04
	Deferred Liabilities:				
770.	Other deferred liabilities:				
	Principal of deferred payments on land contracts, as *per contra*	$82,692.97	$121,833.75	.....	$39,140.78
	Contracts for purchase of real estate	1,660,000.00	1,660,000.00	.....	.....
	Miscellaneous items	7,700,437.52	7,723,795.71	.....	23,358.19
771.	Tax liability	9,677,984.04	7,360,376.12	$2,317,607.92	.....
	Total Deferred Liabilities	$19,121,114.53	$16,866,005.58	$2,255,108.95	.....
	Unadjusted Credits:				
773.	Insurance reserve:				
	Reserve for fire insurance	$2,412,709.10	$2,028,260.32	$384,448.78	.....
776.	Reserve for depreciation	59,622,268.20	55,010,982.81	4,611,285.39	.....
778.	Other unadjusted credits:				
	Contingent interest	989,909.00	848,446.00	141,463.00	.....
	Miscellaneous items	3,933,236.71	3,673,013.27	260,223.44	.....
	Total Unadjusted Credits	$66,958,123.01	$61,560,702.40	$5,397,420.61	.....
	Total Liabilities	**$457,892,532.03**	**$453,554,116.72**	**$3,538,415.31**	.....
	Surplus:				
	Appropriated for additions and betterments	$30,182,674.16	$30,093,990.80	$88,683.36†	.....
	Reserved for depreciation of securities	34,972,570.88	34,972,570.88	.....	.....
	Funded debt retired through income and surplus	536,828.66	536,828.66	.....	.....
	Sinking fund reserves	207,169.80	193,383.23	13,786.57	.....
	Total Appropriated Surplus	$65,899,243.50	$65,796,773.57	$102,469.93	.....
784.	**Profit and Loss—Credit Balance**	**203,743,963.24**	**188,583,273.82**	**15,160,689.42**	.....
	Total Surplus	$269,643,206.74	$254,380,047.39	$15,263,159.35	.....
	As this consolidated balance sheet excludes all intercompany items, securities of the Los Angeles & Salt Lake Railroad Company owned by other System companies are not included. The difference between the par and face value of such securities as carried on the books of the Los Angeles & Salt Lake (less unextinguished discount on the bonds and discount charged to Profit and Loss but added back in consolidating the accounts) and the amounts at which the securities are carried on the books of the owning System companies is set up here to balance	$31,673,367.91	$31,673,367.91	.....	.....
	Grand Total	**$1,158,489,186.68**	**$1,139,607,532.02**	**$18,881,574.66**	.....

† These amounts respectively represent donations made during the year by counties and municipalities and by individuals and companies in part payment for improvements, such as road crossings, drainage projects, and industry spur tracks, the cost of which was charged to "Investment in Road and Equipment." These amounts are so accounted for as to conform with regulations of the Interstate Commerce Commission.

Missouri-Kansas-Texas Railroad Company

and Controlled Companies

Annual Report for the Year Ended December 31, 1926

St. Louis, Mo., April 18, 1927.

To the Stockholders:

The Board of Directors submit herewith report of the operations and affairs for the year ended December 31, 1926.

A summary of results of operation compared with the year 1925 is as follows:

Missouri-Kansas-Texas Lines

Income Account

Year Ended December 31, 1926, Compared with Year Ended December 31, 1924

	1926 Amount	1925 Amount	Increase or decrease
Average Mileage Operated	3,188.54	3,188.54	.....
Operating Revenues:			
Freight	$45,050,764.19	$43,777,643.01	$1,273,121.18
Passenger	8,669,898.05	9,325,059.52	—655,161.47
Mail	1,107,607.25	1,143,052.49	—35,445.24
Express	1,768,780.98	1,758,952.12	9,828.86
Miscellaneous	758,824.51	705,652.37	53,172.14
Incidental	701,501.01	729,568.59	—28,067.58
Joint Facility	43,389.68	52,985.44	—9,595.76
Total Operating Revenues	$58,100,765.67	$57,492,913.54	$607,852.13
Operating Expenses:			
Maintenance of way and Structures	$7,818,706.89	$7,404,573.56	$414,133.33
Maintenance of Equipment	11,203,004.57	11,422,782.90	—219,778.33
Traffic Expenses	1,319,917.96	1,177,621.43	142,296.53
Transportation Expenses	17,625,954.47	17,592,364.34	33,590.13
Miscellaneous Operations	374,479.91	372,178.73	2,301.18
General Expenses	1,984,759.18	1,886,171.37	98,587.81
Transportation for Investment—Cr.	347,753.33	237,563.97	—110,189.36
Total Operating Expenses	$39,979,069.65	$39,618,128.36	$360,941.29
Net Operating Revenue	$18,121,696.02	$17,874,785.18	$246,910.84
Railway Tax Accruals	$3,367,208.42	$2,867,589.28	$499,619.14
Uncollectible Railway Revenues	29,315.93	25,424.04	3,891.89
Total	$3,396,524.35	$2,893,013.32	$503,511.03
Operating Income	$14,725,171.67	$14,981,771.86	$—256,600.19
Other Operating Income:			
Rent from Locomotives	$68,388.92	$74,744.54	$—6,355.62
Rent from Passenger Train Cars	149,542.56	137,921.39	11,621.17
Rent from Work Equipment	28,081.95	30,980.76	—2,898.81
Joint Facility Rent Income	152,840.37	153,301.56	—461.19
Total Other Operating Income	$398,853.80	$396,948.25	$1,905.55
Total Operating Income	$15,124,025.47	$15,378,720.11	$—254,694.64
Deductions from Operating Income:			
Hire of Freight Cars—Debit Balance	$1,222,692.35	$1,534,777.83	$—312,085.48
Rent for Locomotives	33,936.13	40,092.72	—6,156.59
Rent for Passenger Train Cars	68,367.40	68,269.36	98.04
Rent for Work Equipment	36,984.34	77,184.57	—40,200.23
Joint Facility Rents	761,782.20	832,771.37	—70,989.17
Total Deductions from Operating Income	$2,123,762.42	$2,553,095.85	$—429,333.43
Net Railway Operating Income	$13,000,263.05	$12,825,624.26	$174,638.79
Non-Operating Income:			
Income from Lease of Road	$141,758.99	$140,102.20	$1,656.79
Miscellaneous Rent Income	143,998.20	133,930.18	10,068.02
Miscellaneous Non-Operating Physical Property	*2,572.58*	*5,175.47*	2,602.89
Income from Funded Securities	120,801.32	131,797.36	—10,996.04
Income from Unfunded Securities and Accounts	125,624.96	119,465.46	6,159.50
Miscellaneous Income	3,360.25	4,315.62	—955.37
Total Non-Operating Income	$532,971.14	$524,435.35	$8,535.79
Gross Income	$13,533,234.19	$13,350,059.61	$183,174.58
Deductions from Gross Income:			
Rent for Leased Roads	$7,661.40	$7,661.40	.....
Miscellaneous Rents	2,575.97	1,948.53	$627.44
Miscellaneous Tax Accruals	11,602.55	8,691.89	2,910.66
Interest on Unfunded Debt	91,198.86	42,806.89	48,391.97
Miscellaneous Income Charges	540.65	499.34	41.31
Total Deductions from Gross Income	$113,579.43	$61,608.05	$51,971.38
Balance Available for Interest	$13,419,654.76	$13,288,451.56	$131,203.20
Fixed Interest Charges	4,379,546.59	4,432,445.86	—52,899.27
Balance Available for Interest on Adjustment Bonds	$9,040,108.17	$8,856,005.70	$184,102.47
Interest on Adjustment Bonds	2,682,640.62	2,738,386.71	—55,746.09
Net Income	$6,357,467.55	$6,117,618.99	$239,848.56

Italics denote Debit.

Financial

Adjustment Mortgage 5 per cent. Series "A" Bonds amounting to $3,380,900.00 were converted, during the year, into shares of the Preferred Stock, Series "A" with appropriate adjustment of interest and dividend. The surrendered bonds and coupons were delivered to the Corporate Trustee for cancellation.

Underlying bonds and equipment obligations left undisturbed in the reorganization, amounting to $94,100.00, were paid and retired during the year and $55,000.00 were exchanged for Prior Lien Bonds.

Preferred Stock, Series "A" (7% cumulative after January 1, 1928), amounting to $30,400.00, and Common Stock (no par value), amounting to 181 shares, have been issued during the year by the Reorganization Managers for the purposes of the reorganization.

Dividends amounting to $1,615,111.56 were declared during the year, being at the rate of 6% per annum on the Preferred Stock, Series "A" outstanding in the hands of the public.

Your Board of Directors on January 18, 1926, authorized the execution of an agreement with Industrial Investment Company, Limited, to acquire from that Company, subject to the approval of the Interstate Commerce Commission, 5,000 shares of the par value of $100.00 each of Texas City Terminal Railway Company stock for an aggregate purchase price of $2,183,117.94. A provision of this agreement was that your Company should submit and offer to Missouri Pacific Railroad Company, The Southern Pacific Company and The Atchison, Topeka & Santa Fe Railway Company the right to participate in the benefits of the agreement on equal terms with your Company. Under date of January 19, 1926, your Company entered into an agreement with Industrial Investment Company, Limited, to carry this resolution into effect and submitted offers to the above mentioned Companies to participate in the agreement. This offer was accepted by New Orleans, Texas & Mexico Railway Company, on behalf of Missouri Pacific Railroad Company, and by The Atchison, Topeka & Santa Fe Railway Company. Under date of June 18, 1926, joint application was made to the Interstate Commerce Commission by Missouri-Kansas-Texas Railroad Company, New Orleans, Texas & Mexico Railway Company and The Atchison, Topeka & Santa Fe Railway Company for an order authorizing and approving the acquisition of control of Texas City Terminal Railway Company. On September 4, 1926, the Interstate Commerce Commission entered its order approving the joint application. Your Company has therefore purchased one-third of the capital stock of Texas City Terminal Railway Company amounting to 1,666⅔ shares, par value of $100.00, at a cost of $727,705.98.

Your Board of Directors on July 21, 1926, authorized the execution of an agreement with The Kansas City Southern Railway Company to acquire from that Company, subject to the approval of the Interstate Commerce Commission, 135,000 shares of preferred stock and 20,000 shares of common stock of St. Louis Southwestern Railway Company for an aggregate purchase price of $13,613,301.00. Acting under this authority the officers of your Company under date of July 23, 1926, entered into an agreement with The Kansas City Southern Railway Company to carry this resolution into effect, and $7,000,000.00 has been paid on account. Under date of July 23, 1926, application was made by your Company to the Interstate Commerce Commission for an order approving and authorizing the acquisition of control through stock ownership of St. Louis South-

western Railway Company. This application is now pending before the Interstate Commerce Commission.

Operation

The mileage operated on December 31, 1926, was 3,188.54, the same as the mileage on December 31, 1925.

Passenger and freight train service was satisfactorily maintained for our patrons throughout the year. Freight revenues in 1926 were $1,273,121 greater than in 1925; this increase was due largely to an unusually good wheat crop, on which commodity the M-K-T enjoyed a long haul. We had anticipated a large increase in revenue from cotton, but this was not realized, by reason of deferred movement on account of depressed price due to the unprecedented production. Passenger revenues decreased $655,161. There has been a decrease in this class of revenue each year since 1920, due to constant increase in competition from bus and automobile operation, and an uninterrupted highway improvement program throughout the territory.

The average purchase cost of fuel oil increased from $1.274 per barrel in 1925 to $1.360 per barrel in 1926, which adversely affected transportation costs; however, continued activities by our organization to effect economies in other directions in a large measure offset the increased fuel cost. The operating ratio in 1926 was 68.81, compared with ratio of 68.91 in 1925. The 1926 transportation ratio was 30.34, compared with ratio of 30.60 in 1925.

The property, including roadway, structures and rolling stock, has been maintained in good condition.

C. Haile, President.

Missouri-Kansas-Texas Lines Consolidated General Balance Sheet

Assets

	December 31, 1926	December 31, 1925	Increase or Decrease
INVESTMENTS:			
Investment in Road and Equipment.			
Road	$230,572,845.20	$227,291,841.22	$3,281,003.98
Equipment	52,439,619.13	51,634,107.51	805,511.62
	$283,012,464.33	$278,925,948.73	$4,086,515.60
Improvements on Leased Railway Property	8,552.87	8,552.87	.....
Sinking Funds	.....	598.82	—598.82
Deposits in Lieu of Mortgaged Property Sold	197.51	192.66	4.85
Miscellaneous Physical Property	1,054,093.08	910,255.59	143,837.49
Investments in Affiliated Companies—Pledged	527,000.00	527,000.00	.....
Investments in Affiliated Companies—Unpledged	861,561.42	132,364.35	729,197.07
Investment in Securities Issued, Assumed or Otherwise carried as a Liability by the Accounting Company	121,688.00	.....	121,688.00
Other Investments:			
United States Government Securities	821,381.27	3,134,156.25	—2,312,774.98
Other Securities	623,532.96	614,462.42	9,070.54
Total Investments	$287,030,471.44	$284,253,531.69	$2,776,939.75
CURRENT ASSETS:			
Cash	$1,751,872.50	$3,094,777.91	—1,342,905.41
Time Drafts and Deposits	25,000.00	3,000,000.00	—2,975,000.00
Special Deposits:			
Against Purchase of Securities	7,000,000.00	.....	$7,000,000.00
Other Special Deposits	7,896.52	8,151.10	—254.58
Loans and Bills Receivable	13,910.65	8,787.41	5,123.24
Traffic and Car Service Balances Receivable	814,601.61	603,860.57	210,741.04
Net Balance Receivable from Agents and Conductors	1,131,945.72	1,311,192.28	—179,246.56
Miscellaneous Accounts Receivable	1,311,058.82	1,330,393.01	—19,334.19
Material and Supplies	6,777,784.68	6,278,584.63	499,200.05
Interest and Dividends Receivable	10,333.33	41,953.13	—31,619.80
Other Current Assets	135,457.71	71,340.47	64,117.24
Total Current Assets	$18,979,861.54	$15,749,040.51	$3,230,821.03
DEFERRED ASSETS:			
Working Fund Advances	$26,310.31	$22,237.89	$4,072.42
Other Deferred Assets	$4,002.00	1,002.00	3,000.00
Total Deferred Assets	$30,312.31	$23,239.89	$7,072.42
UNADJUSTED DEBITS:			
Rents and Insurance Premiums Paid in Advance	$76,228.28	$80,237.47	—$4,009.19
Other Unadjusted Debits	163,075.72	310,721.12	—147,645.40
Reorganization Suspense	3,367,612.88	3,280,539.76	$87,073.12
Total Unadjusted Debits	$3,606,916.88	$3,671,498.35	—$64,581.47
Total	$309,647,562.17	$303,697,310.44	$5,950,251.73
The following Assets not included in Balance Sheet Accounts:			
Securities Issued or Assumed—Unpledged	$6,100,000.00	$6,100,000.00	.....
Securities in Course of Acquisition	6,613,301.00	.....	$6,613,301.00

Note—Intercorporate Assets and Liabilities are excluded.

Liabilities

	December 31, 1926	December 31, 1925	Increase or Decrease
STOCK:			
Capital Stock:			
Preferred: (Par value $100.00 per share.)			
In hands of Public	$29,328,300.00	$25,917,000.00	$3,411,300.00
In hands of Reorganization Managers for purposes of Reorganization	5,655,600.00	5,686,000.00	—$30,400.00
Common: (No par value. See note.)			
In hands of Public	66,559,507.30	66,544,589.28	14,918.02
In hands of Reorganization Managers for purposes of Reorganization	15,860,492.70	15,875,410.72	—14,918.02
Total Stock	$117,403,900.00	$114,023,000.00	$3,380,900.00
LONG TERM DEBT:			
Mortgage Bonds:			
In hands of Public	$92,541,749.30	$92,551,749.30	—$10,000.00
In hands of Reorganization Managers for purposes of Reorganization	9,901,449.70	9,807,349.70	$94,100.00
Equipment Trust Obligations	756,900.00	841,000.00	—84,100.00
Income Mortgage Bonds:			
In hands of Public	50,825,763.74	54,206,663.74	—3,380,900.00
In hands of Reorganization Managers for purposes of Reorganization	1,690,336.26	1,690,336.26	.....
Total Long Term Debt	$155,716,199.00	$159,097,099.00	—$3,380,900.00
CURRENT LIABILITIES:			
Traffic and Car service Balances Payable	$1,304,969.23	$1,571,757.89	—$266,788.66
Audited Accounts and Wages Payable	4,076,750.68	5,025,690.89	—948,940.21
Miscellaneous Accounts Payable	170,999.11	173,648.55	—2,649.44
Interest Matured Unpaid	1,840,260.76	1,849,099.92	—8,839.16
Dividends Matured Unpaid	11,903.25	7,051.00	4,852.25
Unmatured Dividends Declared	443,197.50	325,632.50	117,565.00
Unmatured Interest Accrued	1,400,076.37	1,487,465.74	—87,389.37
Unmatured Rents Accrued	103,276.23	132,227.10	—28,950.87
Other Current Liabilities	295,876.48	284,311.59	11,564.89
Total Current Liabilities	$9,647,309.61	$10,856,885.18	—$1,209,575.57
DEFERRED LIABILITIES:			
Other Deferred Liabilities	$347,071.18	$253,489.42	$93,581.76
UNADJUSTED CREDITS:			
Tax Liability	$2,565,836.98	$2,082,925.58	$482,911.40
Insurance and Casualty Reserves	458.83	379.39	79.44
Accrued Depreciation—Equipment	6,017,631.15	4,045,636.24	1,971,994.91
Other Unadjusted Credits	1,067,835.46	1,134,898.69	—67,063.23
Total Unadjusted Credits	$9,651,762.42	$7,263,839.90	$2,387,922.52
CORPORATE SURPLUS:			
Additions to Property through Income and Surplus	$36,763.90	$31,744.95	$5,018.95
Profit and Loss—Balance	$16,844,556.06	$12,171,251.99	$4,673,304.07
Total Corporate Surplus	$16,881,319.96	$12,202,996.94	$4,678,323.02
Total	$309,647,562.17	$303,697,310.44	$5,950,251.73
The following Liabilities not included in Balance Sheet Accounts:			
Long Term Debt—Unpledged	$6,100,000.00	$6,100,000.00	.....
Liability for Securities in Course of Acquisition	6,613,301.00	.....	$6,613,301.00

The Company is guarantor, jointly with other Companies, of the securities of certain terminal companies, none of which are in default.

Note: There were 807,565 shares Common Stock outstanding in hands of the public on December 31, 1926, an increase of 181 shares.

There were also 192,435 shares Common Stock on December 31, 1926, issued and held subject to order of the Reorganization Managers under the Plan and Agreement for Reorganization of Missouri, Kansas & Texas Railway Company, dated November 1, 1921.

Securities held by Reorganization Managers under the Plan and Agreement for Reorganization of Missouri, Kansas & Texas Railway Company, dated November 1, 1921, will be accounted for and any unusuel balance returned to the Company.

Tenth Annual Report of Missouri Pacific Railroad Company, Year Ended December 31, 1926

St. Louis, Mo., March 1, 1927.

To the Stockholders:

The Board of Directors herewith submits report of the operations and affairs of the Company as of December 31, 1926.

Corporate Income Statement

For the Year Ended December 31, 1926, Compared with the Previous Year.

	1926	1925	Increase
Railway Operating Revenues	$133,990,294.39	$130,831,661.43	$3,158,632.96
Railway Operating Expenses	102,851,943.72	102,276,499.59	575,444.13
Net Revenue Railway Operations	$31,138,350.67	$28,555,161.84	$2,583,188.83
Railway Taxes and Uncollectible Railway Revenue	$5,649,504.35	$5,301,922.61	$347,581.74
Railway Operating Income	$25,488,846.32	$23,253,239.23	$2,235,607.09
Other Operating Income	1,282,312.93	1,021,373.54	260,939.39
Total Operating Income	$26,771,159.25	$24,274,612.77	$2,496,546.48
Deductions from Operating Income	6,437,373.49	6,261,548.78	175,824.71
Net Railway Operating Income	$20,333,785.76	$18,013,063.99	$2,320,721.77
Non-Operating Income	3,621,286.12	4,459,088.49	*$37,802.37
Gross Income	$23,955,071.88	$22,472,152.48	$1,482,919.40
Deductions from Gross Income	15,323,404.87	14,823,943.82	499,461.05
Balance-Net Income transferred to Profit and Loss	$8,631,667.01	$7,648,208.66	$983,458.35

* Decrease.

Federal Valuation

Informal conferences with the Bureau of Valuation of the Interstate Commerce Commission, having for their purpose the adjusting of errors and omissions in the preliminary engineering, land and accounting reports previously submitted to your Company, were completed during the year.

The Commission's tentative valuation, which will be as of June 30, 1918, will be served upon your Company some time during the present year.

Income

A brief comparative statement of the Corporate Income is shown above, subdivided to indicate the "Net Rialway Operating Income" defined in the Transportation Act of 1920.

Operations (Compared with Previous Year)

The operating results show increases in volume of freight traffic handled and in gross and net income.

Total Railway Operating Revenues for the year were $133,990,294.39 as compared with $130,831,661.43 in the previous year, an increase of $3,158,632.96, or 2.41 per cent.

The increase in Freight Revenue was $3,594,372.60, or 3.45 per cent. The principal increases being, Products of Agriculture, $1,839,898; Products of Mines, $500,425, and Manufactures and Miscellaneous, $1,229,569.

Included in the Products of Agriculture were increases in revenue from Cotton, Cotton Seed and Products of $427,797. Potatoes and Other Fresh Vegetables, $786,105. Citrus and Other Fresh Fruits $391,385, and Wheat, Flour and Meal, $770,451; this latter amount being offset to the extent of $522,869 by a decrease in revenue from Oats.

The increase in revenue from Bituminous Coal included in Products of Mines was $1,265,980 and from other Ores and Concentrates, $345,665; there was a substantial decrease in revenue from Crude Petroleum amounting to $1,184,150. Increase in revenue from Refined Petroleum and its Products included in Manufactures and Miscellaneous was $825,048. The increase in revenue from the Transportation of Automobiles and Auto Trucks was $333,166. The revenues from Products of Forest continue to show a decrease, the amount of decrease compared with previous year being $378,553.

The total Number of Tons of Revenue Freight Handled increased 3.42 per cent, while the Ton Miles increased 5.93 per cent. The Average Revenue Per Ton Mile was 10.65 mills as compared with 10.91 mills in the previous year.

The Passenger Revenue for the Current Year was $16,035,972.47, as compared with $16,536,035.26, a decrease of 3.02 per cent, all of which was in Local System Sales. Interline Traffic, both Forwarded and Received, continues to show substantial increases. Passengers Carried shows a decrease of 15.15 per cent and the Passengers Carried One Mile, a decrease of 0.25 per cent, with an increase in the Average Distance Each Passenger Carried of 12.53 per cent. The continued diversion of short haul Passenger Traffic to Motor Vehicles operated over public highways is apparent. The Average Revenue Per Passenger Per Mile was $0.0327, as compared with $0.0336 last year.

Total Railway Operating Expenses increased $575,444.13, or 0.56 per cent.

The increase in Expenditures for Maintenance of Way & Structures was $796,322; for Maintenance of Equipment, $636,639, while the Transportation Expenses decreased $826,695, or 1.71 per cent, the Transportation ratio having been reduced from 36.92 in 1925 to 35.44.

Hire of Freight Car charges were in excess of the previous year's charges due to an increase in use of private line cars, the payments to that account for the year 1926 showing an increase of $441,129. The average miles per car per day for 1926, was 39.66, compared with 37.22 in 1925, 33.02 in 1924, 26.61 in 1923.

Pension System

One Hundred-three employes were retired in 1926 because of permanent physical disability, or having reached the age limit. Forty-five employes on the Pension Rolls died during the year, making total number of deaths to date, two hundred twenty-four. In the operation of the Pension System since its inauguration on July 1, 1917, six hundred forty-eight employes have been retired on pension allowances, one pensioner having returned to the service. At the close of the year, four hundred twenty-three retired employes were receiving pensions, averaging $56.83 per month, involving monthly expenditures of $24,060.50.

Capital Stock

No changes have been made in the Capital Stock during the year.

Funded Debt

Long Term Debt outstanding in the hands of the public increased $15,027,200, the detail of changes being shown on page 13. The proceeds of this increase in funded debt were used, among other things, to pay $13,391,500 7 per cent Sinking Fund Notes which were called for redemption January 17, 1927.

The 7 per cent Notes will be retired with the proceeds from the sale of Missouri Pacific Railroad Company 5¼ per cent Secured Serial Gold Bonds in the amount of $13,156,000 issued in December, 1926, for that purpose, and the lower rate of interest will result in a substantial reduction of the annual interest charges.

First Mortgage Bonds of the Verdigris Valley, Independence & Western Railroad amounting to $806,000 matured March 1, 1926, were retired.

Payment of $80,000 Serial Note No. 5 due the United States Government resulted in the release of $107,000 First and Refunding Mortgage Series D Bonds held as collateral.

Equipment Trust Certificates, Series E were issued for $4,830,000 to apply on purchase of 25 Locomotives, 2,000 Freight Cars, 22 Passenger Train Cars and 12 Work Cars. Equipment Trust Obligations amounting to $2,282,400 matured and were paid during the year.

During January, 1927, arrangements were completed for the sale, subject to the approval of the Interstate Commerce Commission, of $95,000,000 principal amount Missouri Pacific R. R. Co. First and Refunding Mortgage 5 per cent Gold Bonds, Series F due March 1, 1977, for the purpose of retiring outstanding Series D and E 6 per cent Bonds, to the amount of $49,101,500, and of $8,229,760 of 6 per cent Notes issued to the United States Government, for the payment of $12,000,000 5 per cent Secured Notes maturing July 1, 1927, and to reimburse the Treasury of the Company for Capital expenditures heretofore made, and to cover expenditures to be made under the improvement program for 1927.

The details of this financing have been approved by the Interstate Commerce Commission, and the transaction will be completed early in the present year. The refunding of the 6 per cent Bonds and Notes will result in a material decrease in the present interest charges.

The Funded Debt Outstanding is shown on pages 14 to 16, inclusive. Detailed description of the Mortgages will be found on pages 19 to 25, inclusive.

New Lines

Construction of new line from Epps, La., to Delhi, La., connecting with the V. S. & P. Railway, was completed during the

year. Tracks extending from South Dupo, Ill., to Krause, Ill., commenced in 1925, were completed during the year. An extension in a northwardly direction of the Hot Springs Branch from its present terminus at Hot Springs, a distance of 11.82 miles primarily to serve an undeveloped yellow pine timber territory, was commenced in the latter part of the year, and will be completed and placed in operation during the year 1927. The net increase in mileage owned and operated was 10.30 miles, details of which appear on pages 42 to 45.

The acquisition during the year, of Capital Stock of the Marion and Eastern Railroad Company, with an approximate mileage of 13 miles, located in Williamson County, Illinois, will afford access to well developed shaft coal mines including undeveloped acreage tributary to the line, containing coal for many years' operations, thus assuring a continuing substantial coal traffic to the Missouri Pacific Lines.

There was also acquired during the year, the Capital Stock and all outstanding Mortgage Bonds of New Orleans and Lower Coast Railroad Company, owning and operating a line of railroad extending 60 miles south from New Orleans, La., along the west bank of the Mississippi River, through a fertile agricultural territory, considerable progress having already been made by the citrus fruit industry near the southern terminus of this line. The dependable transportation service resulting from the improvements to this line will not only develop this territory along agricultural lines, but will also be the means of furnishing favorable locations for industries.

Road and Equipment

Substantial expenditures were made for additional facilities, improved structures and additional equipment, the cost of which is reflected in the charges to Road and Equipment. The largest piece of construction work handled during the year was the 22.27 miles of second main track on the heavy traffic subdivision St. Louis to Jefferson City, including rearrangement and enlargement of Jefferson City Yard, which is the second year's portion of a three-year program of additional main track construction on the Eastern Division. Other large expenditures were an additional 5 miles of second main track between Alexander and Bauxite Junction, Ark.; completion of construction of joint yard at Alexandria, La.; improvements to Hot Springs, Ark., passenger terminals; construction of new freight house at Coffeyville, Kans., and installation of additional automatic block signals principally on various sections of the line between St. Louis and Kansas City and between St. Louis and Texarkana.

There was delivered and put in service during the year the following equipment:

10 Santa Fe Type Freight Locomotives,
15 Switching Locomotives,
2 Steel Cafe Club Cars,
5 Steel Dining Cars,
15 Steel Baggage Cars,
1 Steel Business Car,
1735 Box Cars,
250 Automobile Cars,
250 Stock Cars,
250 Self Clearing Hopper Cars,
8 Gasoline Motor Cars,
2 Wrecking Derricks,
1 American Ditcher,
1 Jordan Spreader,
1 Tool Car,
7 Water Cars,
1 Convoy Car.

Orders have been placed for additional equipment, as follows: 5 Mountain Type Passenger Locomotives, 15 Switching Locomotives, 5 Steel Dining Cars, 3 Steel Cafe Club Cars, 10 Steel Baggage Cars, 6 Steel Mail-Baggage Cars, 10 Steel Coach-Baggage Cars, 10 Steel Coaches, 750 Box Cars, 750 Automobile Cars, 500 Furniture Cars, 250 Steel Hopper Bottom Coal Cars, 250 Stock Cars, 2 Locomotive Cranes, 1 Ditcher, 2 Dump Cars, 2 Rail Unloaders.

Orders will be placed during the year for 5 Freight Locomotives, 5 Steel Baggage Cars, 4 Weed Burners, and 300 Box Cars.

A summary of charges to Road and Equipment follows:

New Lines Constructed		$370,826.01
Second Main Track		3,454,396.26
Road	$10,628,059.19	
Less Retirements	256,199.19	10,371,860.00
Equipment	$8,136,954.50	
Less Retirements	2,499,425.57	5,637,528.93
Assets and Liabilities not Appraised June 1, 1917—Cr.		496,725.74
Total Charges to Road and Equipment		$19,337,885.46

By Order of the Board of Directors.
L. W. Baldwin,
President.

[Advertisement]

Railway Finance

(*Continued from page* 1358)

$447,461 in 1925. Selected items from the income statement follow:

International-Great Northern

	1926	1925
Average mileage operated.	1,159.50	1,159.50
Railway Operating Revenues	$19,245,644	$17,083,748
Maintenance of way	$3,404,365	3,085,733
Maintenance of equipment	3,330,133	2,882,165
Transportation	7,303,051	6,654,870
Total Operating Expenses	$15,074,442	$13,517,750
Operating ratio	78.33	79.13
Net Revenue from Operations	$4,171,202	$3,565,998
Railway tax accruals	543,291	$16,138
Railway operating income.	$3,621,730	$3,047,793
Hire of freight cars—Dr.	874,188	769,563
Joint facility rents—Dr.	120,540	91,993
Net Railway Operating Income	$2,554,798	$2,239,278
Non-operating income	111,554	94,910
Gross Income	$2,666,352	$2,334,187
Rent for leased roads	2,335	4,344
Interest on funded debt.	1,962,706	1,859,000
Total Deductions from Gross Income	$1,981,702	$1,886,727
Net Income	$684,650	$447,461

Illinois Central.—*Bonds.*—This company and the Chicago, St. Louis & New Orleans have applied to the Interstate Commerce Commission for authority to issue and sell $17,350,000 of joint first refunding mortgage 4½ per cent bonds, in substitution for a like amount of 5 per cent bonds heretofore pledged to secure an issue of $16,000,000 of Illinois Central bonds, which are to be called. The railroads have tentatively accepted an offer made by Kuhn, Loeb & Co. to purchase the bonds at 95.

Bonds Sold.—Kuhn, Loeb & Co., on April 26, offered $17,350,000 Illinois Central and Chicago, St. Louis & New Orleans joint first refunding mortgage 4½ per cent bonds, series C, maturing December 1, 1963, at 97½ and accrued interest to yield 4.46 per cent to maturity. The purpose of this issue is to provide the necessary funds for the retirement of $16,000,000 principal amount of the company's secured 5½ per cent bonds, which have been called for redemption on July 1, 1927, and for other corporate purposes.

1926 *Earnings.*—See excerpts from annual report appearing on adjacent pages.

Missouri-Kansas-Texas.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges, including interest on the adjustment bonds of $6,357,467, equivalent after allowance for 7 per cent dividends on the preferred stock to $5.33 a share on the no-par-value common stock. Net income in 1925 was $6,117,618 or $5.21 a share. See excerpts from annual report appearing on adjacent pages.

Missouri Pacific.—1926 *Earnings.*—See excerpts from annual report appearing on adjacent pages.

New Orleans, Texas & Mexico.—1926 *Earnings.*—Annual report for 1926 shows net income after interest and other fixed charges of $1,874,560 equivalent to $12.49 a share on the capital stock. Net income in 1925 was $2,514,164 or $16.75 a share. Selected items from the income statement follow:

New Orleans, Texas & Mexico

	1926	1925
Average mileage operated.	926.06	921.74
Railway Operating Revenues	$16,500,683	$14,718,818
Maintenance of way	$3,077,210	$2,216,018
Maintenance of equipment	2,802,053	2,401,637
Transportation	4,595,885	4,161,456
Total Operating Expenses	$11,580,539	$9,828,640
Operating ratio	70.18	66.78
Net Revenue from Operations	$4,920,143	$4,890,178
Railway tax accruals	765,752	747,930
Railway operating income.	$4,149,420	$4,124,145
Hire of freight cars—Dr.	466,273	24,156
Joint facility rents—Dr.	257,828	268,606
Net Railway Operating Income	$3,415,735	$3,757,859
Non-operating income	333,005	356,682
Gross Income	$3,748,740	$4,114,541
Rent for leased roads	2,126	3,956
Interest on funded debt.	1,862,238	1,463,438
Total Deductions from Gross Income	$1,874,180	$1,600,377
Net Income	$1,874,560	$2,514,164
Disposition of net income: Dividends on capital stock	$1,038,198	$1,038,198
Surplus for year carried to profit and loss	$836,362	$1,475,966

NEW YORK, NEW HAVEN & HARTFORD.—*Equipment Trust.*—This company has applied to the Interstate Commerce Commission for authority to assume obligation and liability in respect of $6,660,000 of equipment trust certificates, to be issued at par to the Keith Car & Manufacturing Company, in connection with the purchase of 4,766 steel underframe box cars, to be constructed in part from materials from old cars, at an estimated cost of approximately $1,500 each.

Aquisition.—The Interstate Commerce Commission has authorized this company to acquire control of the Hartford & Connecticut Western by assumption of lease.

PENNSLYVANIA.—*Valuation Hearing.*—A hearing on the protests filed by the Pennsylvania Railroad and subsidiary companies in its system against the tentative valuation reports covering their properties heretofore served by the Interstate Commerce Commission was begun before Examiners Gibson and Woodrow on April 25 at Washington, but after some stipulations as to data to be used in the case which had been agreed to by the railroad and the commission's Bureau of Valuation had been submitted, further hearings were postponed to May 2.

ST. LOUIS SOUTHWESTERN.—*Executive Committee Opposes Re-election of Walter E. Meyer.*—The executive committee has sent out to stockholders duplicate proxies for the annual meeting on May 4 so that if desired they may revoke proxies previously signed in favor of the minority stockholders' committee represented by Walter E. Meyer. The executive committee has a list of directors including the following names: Frank M. Gould and F. W. Green, vice-presidents; E. Roland Harriman, Charles Hayden, L. F. Loree, Carl F. G. Meyer, Winslow S. Pierce, Paul Rosenthal and Daniel Upthegrove, president. The list includes the present directors with the exception of Frank M. Gould who would, if elected, replace Mr. Meyer. The statement of the executive committee reads in part:

"Since Mr. Meyer's election to the board at the annual meeting, his opposition to important corporate policies has been persistent; and he has not hesitated before public authority and through circulation of printed matter, not only to oppose measures unanimously approved by all other members of the board, but most offensively to question the good faith and independence of all his associates on the board.

"That the Cotton Belt has through a wise use of surplus revenues in the improvement of its property, equipment and general efficiency, brought nearer the day of declaration and continued maintenance of common dividends does not admit of doubt. The determination of that day is a matter of discretion with the Board. . . . The simple truth is that neither the advent of new interests in the board nor the advent of Mr. Meyer himself has brought about any coincident change in the dividend policy of the company which has heretofore worked such manifest advantage to the property and to the stockholders.

"The foregoing is stated not because the Cotton Belt considers this a relevant issue here, nor because it apprehends any criticism of its own conservatism in this respect, but to the end that Intervener Meyer's offensive claim—that the dividend policy of the company is controlled by a dominant interest—shall not go unchallenged and uncontradicted.

"In view of Intervener Meyer's complete default of constructive effort on behalf of the so-called minority stockholders, it is not surprising that his alleged representation of 72,000 shares at the time of the May annual meeting (last year) had dwindled to less than 22,000 shares at the time of his intervention in these proceedings—this exclusive of 9,300 shares which were withdrawn at the time of the Washington hearing."

Statement by Walter E. Meyer.—Walter E. Meyer, on behalf of the minority stockholders, in his reply to the statement made by the executive committee said that "it is quite true that I have been opposed to the measures approved by the other members of the board of directors." Mr. Meyer also added:

"It is not true, however, as stated, that apart from my own interest no other dissentient interest exists among the stockholders of the St. Louis Southwestern Company. That this statement is false is evident from the fact that to date in my campaign for minority representation on the St. Louis Southwestern board I have already obtained proxies in the amount of over 45,000 shares from over 275 stockholders. This amount is more than sufficient to security minority representation on the St. Louis Southwestern board in the absence of pressure brought to bear by the banking associates of Mr. Loree for the revocation of these proxies.

"I have consistently opposed various acts of the Kansas City Southern controlled board of St. Louis Southwestern. More specifically, these acts have been the approval by the board of the purchase of 100,000 shares of Missouri-Kansas-Texas common stock at almost the top price that the stock has ever reached. This stock is a highly speculative, non-dividend paying common stock, and since its purchase has fluctuated widely, showing the St. Louis Southwestern at one time during the past year a loss of as much as $1,500,000, equal to almost $10 per share on the common stock.

"I am also opposed to the acts of the Kansas City Southern controlled board of the St. Louis Southwestern in causing the St. Louis Southwestern to enter into a contract with the Southern Pacific which is most unfair to the St. Louis Southwestern, made in the interest of the Loree plan, and in order to avoid the opposition of the Southern Pacific to the applications under the Loree plan pending before the I. C. C.

"If the applications are granted, the existence of this contract in my opinion will work grave damage to the St. Louis Southwestern, as it imposes an obligation on the part of the St. Louis Southwestern to solicit freight preferentially for the Southern Pacific, while Southern Pacific on the other hand is practically free from any positive obligation toward the St. Louis Southwestern.

"I am in favor of paying dividends on the common stock of the St. Louis Southwestern, as I believe the condition of the company is such that it can well afford to do so.

"It is hoped that a very large number of stockholders will send in proxies for their shares in order that we may have not one but several representatives of the minority stockholders on the board of directors of the St. Louis Southwestern."

Average Price of Stocks and Bonds

	Apr. 26	Last week	Last year
Average price of 20 representative railway stocks	110.55	110.91	91.31
Average price of 20 representative railway bonds	94.50	94.70	91.48

Dividends Declared

Atlanta & West Point.—4 per cent, payable June 30 to holders of record June 20.

Colorado & Southern.—First preferred, 2 per cent, semi-annually, payable June 30 to holders of record June 18.

Elmira & Williamsport.—Common, $1.15, payable May 2 to holders of record April 20.

Georgia Southern & Florida.—First and second preferred, 2½ per cent; both payable May 26 to holders of record May 12.

Norfolk & Western.—Common, $2.00, quarterly, payable June 18 to holders of record May 31.

Western Railway of Alabama.—4 per cent, payable June 30 to holders of record June 20.

Valuation Reports

The Interstate Commerce Commission has issued final or tentative valuation reports finding the final value for ratemaking purposes of the property owned and used for common-carrier purposes as of the respective valuation dates, as follows:

Final Reports

Gulf & Sabine River	$243,000	1919
North Charleston Terminal	112,500	1919
Tonopah & Tidewater	2,709,998	1915

Tentative Reports

Dayton & Union	666,135	1918

Officers

Financial, Legal and Accounting

J. Gordon Watson has been appointed assistant secretary of the Pennsylvania with headquarters at Philadelphia. **S. M. McIntyre,** assistant auditor of local freight traffic, has been appointed auditor of local freight traffic. He has been succeeded in his former position by **J. T. Davis.**

Operating

Frank Reardon has been appointed acting transportation inspector of the Albuquerque division of the Atchison, Topeka & Santa Fe, with headquarters at Winslow, Ariz.

J. J. Woods, supervisor of stations of the Nickel Plate and Lake Erie and Western districts of the New York, Chicago & St. Louis, has been appointed general supervisor of stations with jurisdiction over the system and headquarters at Cleveland, Ohio, and the position of supervisor of stations on those two districts of the Nickel Plate has been abolished.

S. P. Henderson, superintendent of the Northern division of the Chicago & Alton, with headquarters at Bloomington, Ill., has been promoted to general superintendent with headquarters at the same point, succeeding **W. H. Penrith,** who has resigned, effective May 1, to become vice-president of Colianni Brothers, Chicago, railroad contractors. **J. J. Butler,** assistant superintendent at Bloomington, has been promoted to succeed Mr. Henderson.

F. Theodore Buechler, who has been promoted to superintendent of the Sioux City and Dakota division of the Chicago, Milwaukee & St. Paul, with headquarters at Sioux City, Iowa, was born on June 22, 1885, at Chicago. He attended the Brownton, Minn., high school and entered railway service on November 2, 1902, as an agent on the Milwaukee, serving in this capacity and as an an operator until August, 1907, when he became a train dispatcher at Aberdeen, S. D. Mr. Buechler was promoted to chief dispatcher in August, 1918, acting in that capacity at Aberdeen, at Mitchell, S. D., and at Montevideo, Minn., until October 15, 1923, when he was further promoted to trainmaster on the LaCrosse division. On May 1, 1925, he was advanced to assistant superintendent of the Twin City terminals, with headquarters at Minneapolis, Minn., a position he held until his appointment as superintendent of the Sioux City and Dakota division on April 1.

Traffic

Vincent P. Sumerfield, who has been appointed general freight agent of the Pennsylvania, with headquarters at Philadelphia, Pa., was born on **May 3,** 1881, at Philadelphia. He entered railway service on April 1, 1898, with the Pennsylvania, as a clerk in the Bridesburg, Pa., station. He was transferred to the Frankfort, Pa., station in September, 1898, and the following month was appointed freight clerk at the North Philadelphia station. **Mr.** Sumerfield was appointed assistant chief clerk at the same station on November 16, 1905, and clerk in the general freight department at Philadelphia on July 1, 1906. He was advanced to chief rate clerk at the same place on June 1, 1911, and to assistant general freight agent on June 1, 1922, which position he was holding at the time of his recent appointment as general freight agent.

Frank C. Jerome, who has been appointed general freight agent of the New York Central, Buffalo and east, and the West Shore Railroad, was born in New Haven, Conn., and entered the service of the New York Central as

F. C. Jerome

a junior clerk in the general freight office. He next became secretary to the general freight agent, serving subsequently as chief clerk in the New York traffic office of the Merchants Despatch Transportation Company, contracting agent at the Wall street office, chief contracting agent in the Broadway office of the New York Central, and then, successively, westbound agent and commercial agent. On the return of the railroads to their owners following federal control, Mr. Jerome was appointed assistant to the freight traffic manager. In 1921 he was appointed general eastern freight agent and, in 1925, assistant general freight agent—which latter position he was holding at the time of his recent promotion.

Engineering, Maintenance of Way and Signaling

C. F. Allen, roadmaster on the Chicago and Milwaukee division of the Chicago, Milwaukee & St. Paul, has been promoted to division engineer, with headquarters at Milwaukee, Wis., a newly created position.

W. L. Connors, assistant signal engineer of the Buffalo, Rochester & Pittsburgh, has been promoted to signal engineer, with headquarters at New York, succeeding **E. W. Kolb,** resigned to accept employment with the General Railway Signal Company. The position of assistant signal engineer at DuBois, Pa., has been abolished.

Mechanical

John W. Griffiths has been appointed superintendent of motive power of the Guantanamo Western wtth headquarters at Guantanamo, Cuba.

J. C. Mengel, master mechanic of the Altoona (Pa. machine shops of the Pennsylvania, has been appointed assistant to the works manager. **O. N. Edmondson,** general foreman of the Juniata erecting and machine shops, succeeds Mr. Mengel at Altoona.

C. B. Smith, who has been appointed engineer of tests of the Boston & Maine, with headquarters at Billerica shops, North Billerica, Mass., was born on November 28, 1867, at Montgomery, Vt. He attended Colgate Academy, Hamilton, N. Y., and was graduated in mechanical engineering from Worcester Polytechnic Institute

C. B. Smith

in 1888. He entered railroad service in 1895 as assistant chief draftsman for the Boston & Maine. Four years later he was appointed chief draftsman and, in 1901, became master mechanic of the Boston shops. He remained in this capacity until 1906 when he was appointed mechanical engineer, which position he held until January of the current year, when he was appointed assistant to the mechanical superintendent. This position he held at the time of his recent appointment as engineer of tests.

Obituary

Henry Grandison Maney, assistant comptroller of the Nashville, Chattanooga & St. Louis for the past 27 years, died on April 19 at a hospital in Nashville, Tenn., from bronchial pneumonia following a six weeks' illness. Mr. Maney was born on February 6, 1861, at Petersburg, Va., and received his education in the Nashville public schools. His entire period of railway service, 48 years, had been with the N. C. & St. L., beginning in 1879 when he became a check clerk in the freight receiving department of the original company, the Nashville & Chattanooga, at Nashville. In 1882 he was transferred to a clerkship in the office of the general bookkeeper in the auditing department, being advanced to auditing clerk on April 1, 1883. On the same date of the following year Mr. Maney was promoted to auditor of disbursements, where he remained until he was again promoted to assistant auditor, holding this position until the time of his death.

R. Townsend McKeever, who retired from railroad service as vice-president of the Copper Range in 1913 and had been more recently a member of the firm of Charles Sincere & Co., Chicago, stock brokers, died on April 19 near Stockholm, Sweden. Mr. McKeever contracted pneumonia while on a yachting trip in European waters and died on board the yacht of Ira C. Copley, former congressman from Illinois. Mr. McKeever was born on July 20, 1866, at New York and graduated from St. John's school, Ossining, N. Y., entering railway service in 1888 as a clerk to the auditor of disbursements of the Northern Pacific. During 1889 and 1890 he served in a similar capacity for the general manager of the Northern Pacific & Manitoba (now a part of the Northern Pacific) at Winnipeg, Man. For the following two years he was assistant to the general manager of the Adirondack & St. Lawrence (now a part of the Delaware & Hudson), being promoted to trainmaster on this railroad in April, 1892, and assistant superintendent in January, 1893. In April of the same year he was appointed general superintendent of the Fonda, Johnstown & Gloversville. While Mr. McKeever left this railroad to became general passenger agent of the Rutland and the Ogdensburg & Lake Champlain (now merged with the Rutland) in February, 1899, he remained a director until 1916. In March, 1900, he was appointed general manager of the Copper Range, becoming in addition vice-president in 1905. In 1912 Mr. McKeever relinquished his duties as general manager, continuing as vice-president until 1913. Since that time he has been engaged in the stock brokerage business.

The Northern Pacific has established a new passenger office at Fifth avenue and Forty-sixth street, New York City, and has purchased the building in which the office is situated.